HARMONY

ITS THEORY AND PRACTICE

EBENEZER PROUT

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HARMONY

ITS THEORY AND PRACTICE

BY

EBENEZER PROUT

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PREFACE TO THE FIRST EDITION.

So large a number of works on Harmony already exists that the publication of a new treatise on the subject seems to call for explanation, if not for apology. The present volume is the outcome of many years' experience in teaching the theory of music, and the author hopes that it contains sufficient novelty both in plan and in matter to plead a justification for its appearance.

Most intelligent students of harmony have at times been perplexed by their inability to reconcile passages they have found in the works of the great masters with the rules given in the text-books. If they ask the help of their teacher in their difficulty, they are probably told, "Bach is wrong," or "Beethoven is wrong," or, at best, "This is a licence." No doubt examples of very free part-writing may be found in the works of Bach and Beethoven, or even of Haydn and Mozart; several such are noted and explained in the present work. But the principle must surely be wrong which places the rules of an early stage of musical development above the inspirations of genius! Haydn, when asked according to what rule he had introduced a certain harmony, replied that "the rules were all his very obedient humble servants"; and when we find that in our own time Wagner, or Brahms, or Dvořák breaks some rule given in old text-books there is, to say the least, a very strong presumption, not that the composer is wrong, but that the rule needs modifying. In other words, practice must precede theory. The inspired composer goes first, and invents new effects; it is the business of the theorist not to cavil at every novelty, but to follow modestly behind, and make his rules conform to the practice of the master. It is a significant fact that, even in the most recent developments of the art, nothing has yet been written by any composer of eminence which a sound theoretical system cannot satisfactorily account for; and the objections made by musicians of the old school to the novel harmonic progressions of Wagner are little more than repetitions of the severe criticisms which in the early years of the present century were launched at the works of Beethoven.

It is from this point of view that the present volume has been written. The rules herein given, though in no degree inconsistent with the theoretical system expounded, are founded, not upon that, nor on any other abstract system, but upon the actual practice of the great masters; so that even those musicians who may differ most widely from the author's theoretical views may still be disposed to admit the force of practical rules supported by the authority of Bach, Beethoven, or Schumann.

The system of theory propounded in the present volume is founded upon the dictum of Helmholtz, quoted in Chapter II. of this work (§ 42), that "the system of Scales, Modes, and Harmonic Tissues does not rest solely upon unalterable natural laws, but is at least partly also the result of æsthetical principles, which have already changed, and will still further change with the progressive development of humanity." While, therefore, the author follows Day and Ouseley in taking the harmonic series as the basis of his calculations, he claims the right to make his own selection, on æsthetic grounds, from these harmonics, and to use only such of them as appear needful to explain the practice of the great masters. Day's derivation of the chords in a key from the tonic, dominant, and supertonic is adhered to, but in other respects his system is extensively modified, its purely physical basis being entirely abandoned. It will be seen in Chapter II. (§ 44) that by rejecting altogether the eleventh and thirteenth notes of the harmonic series, and taking in their place other notes produced among the secondary harmonics, the chief objection made by the opponents of all scientific derivation of harmony—that two of the most important notes of the scale, the fourth and the sixth, are much out of tune—has been fully met. In the vexed question of the minor tonic chord, Helmholtz is followed to a considerable extent; but Ouseley's explanation of the harmonic origin of the minor third is adopted.

Truth is many sided; and no writer on harmony is justified in saying that his views are the only correct ones, and that all others are wrong. No such claim is made for the system herein set forth; but it is hoped that it will at least be found to be intelligible, perfectly consistent with itself, and sufficiently comprehensive to explain the progressions of the advanced modern school of composers.

It has been thought desirable to separate as far as possible the practical from the theoretical portions of this work. The latter are therefore printed in smaller type; and it will be found advisable for beginners, who may take up this work without any previous knowledge of the subject, to omit at least Chapters II. and III., dealing with the Harmonic Series and Key or Tonality,

until some considerable progress has been made in the practical part of the volume. The exact point at which the student will do well to return to the omitted portions will depend upon his progress and his general intelligence, and must be left to the discretion of the teacher.

In the practical part of the work an attempt has been made to simplify and to codify the laws. With a view of effecting these objects, many rules now obsolete, and contravened by the daily practice of modern writers, have been altogether omitted, and others have been greatly modified; while the laws affecting the chords, especially the higher discords—the ninths, elevenths, and thirteenths—have been classified, and, it is hoped, materially simplified. It is of the utmost importance that students who wish to master the subject should proceed steadily and deliberately. For example, a proper understanding of the chords of the eleventh will be impossible until the student is quite familiar with the chords of the ninth, which in their turn must be preceded by the chords of the seventh. The learner's motto must be, "One thing at a time, and that done thoroughly."

In preparing the exercises a special endeavour has been made to render them interesting, as far as possible, from a musical point of view. With this object they are, with a few exceptions, written in the form of short musical sentences, mostly in four-bar rhythm, illustrating the various forms of cadence. To stimulate the pupil's imagination, and to encourage attempts at composition, many exercises are in the form of double chants or hymn tunes. Each bass can, of course, be harmonized in several different positions; and the student's ingenuity will be usefully exercised in trying to write as melodious an upper part as possible for these little pieces.

Not the least interesting and valuable feature of the volume will, it is believed, be found in the illustrative examples, considerably more than 300 in number. These have been selected chiefly, though not exclusively, from the works of the greatest masters, from Bach and Handel down to the present day. Earlier examples are not given, because modern harmony may be said to begin with Bach and Handel. While it has been impossible without exceeding reasonable limits to illustrate *all* the points mentioned, it is hoped that at least no rule of importance has been given without quoting some recognized author in its support. It may at all events be positively said that, had want of space not prevented their quotation, examples might have been found to illustrate every rule laid down in the volume.

It was originally intended to have included in the present work chapters on Cadences, and on Harmonizing Melodies.

The volume has, however, extended to so much larger dimensions than was at first contemplated, that these chapters, which belong rather to practical composition than to harmony in its strict sense, have been reluctantly omitted. It is intended to follow the present work by a treatise on Composition, in which these and similar subjects will be more appropriately dealt with.

The author desires to acknowledge the valuable assistance he has received in the preparation of his work, first and foremost from his son, Louis B. Prout, to whom he is indebted for a very large number of the illustrative examples, and who has also written many of the exercises. Valuable aid has also been received from the late Rev. Sir Frederick Ouseley, with whom, down to the time of his lamented death, the author was in frequent correspondence on the subject of this work. To his friend, Dr. Charles W. Pearce, also, the author must express his thanks for much generous interest and many most useful suggestions, as well as for his kind assistance in revising the proof-sheets of the volume.

It would be unreasonable to expect that the present work will meet with universal approval; but it may at least claim to appeal to teachers and students as an honest attempt to simplify the study of harmony, and to bring it down to date.

LONDON, *June*, 1889.

PREFACE TO THE SIXTEENTH EDITION.

It is now more than twelve years since the first edition of *Harmony: Its Theory and Practice* was published; and the great success with which the work has met has no less surprised than gratified its author. At the same time he must say that, after so many years' experience in teaching from it, he would have been either hopelessly ignorant or incurably conceited had he not become fully aware of its numerous defects and shortcomings. He has felt that he could best show his appreciation of its generous reception by the musical public by improving it as far as lay in his power. For some years past it has been his intention to do this as soon as the pressure of work allowed; but he has thought it best to complete the series of which this forms the first volume before undertaking so serious a task as remodelling this treatise.

Though called a new edition, it would be hardly too much to describe the present as a new book. Considerably more than half the text is either additional matter, or has been entirely rewritten. A short account of the modifications introduced is necessary, that the reason for the numerous changes made may be understood.

First and foremost among these is the virtual abandonment of the harmonic series as the basis on which the system is founded. Further investigation and thought have convinced the author that the practical objections to the derivation of the higher discords—the ninths, elevenths, and thirteenths—from the natural series of upper partials were far greater than he had realized in first writing the volume. That the acoustical side of the subject has nevertheless an important bearing on harmony he still holds; and this matter is dealt with in Appendix B, which replaces Chapter II of previous editions. But the modern key, whether major or minor, is so largely the result of æsthetic, rather than of scientific considerations that it is far better for the student that it should be dealt with from the former point of view. It is obvious that this change has necessitated an entirely new treatment of the question of the chromatic constituents of a

key. The plan now adopted will, it is believed, be found much simpler and easier, especially for self-instruction, than its predecessor. The chromatic element is regarded as subordinate to the diatonic, and chromatic chords are considered as being borrowed from neighbouring keys. This view it is believed, was first propounded by the author's son, Louis B. Prout, in his *Harmonic Analysis*, to which little work the author acknowledges his obligations for many valuable suggestions.

The new treatment of the subject has involved the rearrangement of a great part of the contents of the volume. The whole of the diatonic material of the key, up to and including the chord of the dominant thirteenth, is dealt with before the chromatic chords are introduced. This has necessitated the remodelling, and in some cases the entire rewriting of the exercises. To avoid the inconvenience arising from the use of two books, the Additional Exercises have been incorporated in the volume, and the exercises on each chapter have been graduated, as far as practicable, in the order of difficulty. This, however, does not apply to the Chants and Hymn Tunes, which it has been thought advisable to place by themselves at the end of each chapter.

A new feature of the present edition is that, from the very beginning, the harmonizing of simple melodies is taught simultaneously with the harmonizing of figured basses. It is often found that pupils who can do the latter with ease are hopelessly at sea when they attempt the former. The author's own experience is that, if the two are taken together, the harmonization of a melody presents no very great difficulty even to beginners of average ability, and that each branch of the study throws light upon the other.

Another most important addition to this volume is the full analysis of the harmony given throughout. The system adopted, though with considerable modification, is that of E. F. Richter; the author has extended the idea of his predecessor by making a difference between "inversions" and "derivatives" of chords (See § 252). Though the method looks at first sight complex, it is in practice extremely simple, if systematically pursued from the beginning; and the insight into the harmonic structure of a composition which is obtained by its means will be found by the earnest student invaluable. For his guidance, and more particularly for teachers who may use this book, special attention is called to the new *Key to the Exercises*. In this, every chord in each exercise is analyzed on the system here taught. Though the Key should in no case be used as a "cram," it will be most useful to consult it after the exercises have been worked, and the analyses written beneath them.

Of the two Appendices, the second has been already spoken of. The first contains a necessarily brief and incomplete account of the Ecclesiastical Modes, a subject of which most students know little or nothing, but a slight acquaintance with which will be found of great use in aiding their comprehension of much of the music of the seventeenth and eighteenth centuries. The sketch—for it professes to be nothing more—has been compiled from many sources, chief among which should be named Marx's *Composition* and Charles Child Spencer's *Brief Account of the Church Modes*.

The author would acknowledge his obligations to many who have kindly assisted him with advice and suggestions in the preparation of this new edition. From his son he has received much valuable help; and he also desires especially to thank his friends Dr. A. J. Greenish and Mr. R. Orlando Morgan for many useful practical hints. He is also indebted to several kind friends for their help in reading the proofs—a more than usually laborious task, especially as regards the Key, owing to the multiplicity of detail.

It is hoped, not without some confidence, that the present edition will be found not only more complete, but far simpler for teaching purposes than the work in its earlier form; if it smooths over the difficulties in the path of the student, the author will feel himself well repaid for the year's hard work spent in its preparation.

London: December, 1901.

NOTE.

In consequence of the rearrangement of the subject matter in the present edition, both Chapters and Sections have been renumbered. As there are many references to *Harmony* in the following volumes of the series, a table is here given of the Chapters and Sections referred to, with the corresponding numbers in the new edition. As the other volumes of the series are reprinted, the necessary alterations of references will be made in the text. In two cases (§§ 423, 434), they will not be found, because the passages in question have been replaced in the new edition by others.

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HARMONY:

ITS THEORY AND PRACTICE.

CHAPTER I.

INTRODUCTION.

1. A certain amount of elementary knowledge of music will be necessary to the student before beginning the study of the present work. It will be assumed that he is acquainted with the names of the notes, the meanings of the various musical signs (accidentals, etc.), the relative time values of notes of different lengths, and such other matters as are treated of in ordinary text-books on the Elements of Music.

2. A musical sound is produced by the periodic vibration of the air, that is to say, its motion at a uniform rate. When the air moving at a uniform rate comes in contact with the nerves of hearing, there is produced, provided the motion is sufficiently rapid, what is called a musical sound, or note. The *pitch* of a sound (that is, its being what is called a *high* or a *low* note), depends upon the rapidity of the vibration. (See Appendix B.)

3. If sounds of different pitch are heard one after another, we get what is called MELODY;* if sounds of different pitch are heard together, we get HARMONY. It is the laws of harmony that we shall explain in this book; but it will be seen as we proceed that the question of melody is often so closely connected with that of harmony, that it is impossible to treat of one without also paying some attention to the other.

4. If two different notes are sounded, either in succession or together, it is clear that one of the two must be the higher, and the other the lower. The difference in pitch between the two sounds is called the *Interval* between them. This difference may be so small as to be hardly recognizable by the ear; or it may be as great as between the lowest and highest notes of a

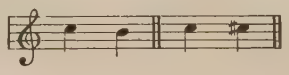
* This is only a very general definition; difference of pitch *alone* is not sufficient to make a good melody; but for the present purpose the ideas of melody as a *succession* of sounds and of harmony as a *combination* of sounds will suffice. For a more complete definition of melody, see *Musical Form*, Chapter I.

large organ, or anything between the two. An infinite number of intervals is possible; but in music we make a selection, the nature of which will be explained later. For the present we are merely defining the meaning of the word "Interval."

5. The smallest interval used in music is called a SEMITONE.* We may define a Semitone, as *the distance between any one note, and the nearest note to it, above or below, on any instrument which has only twelve sounds in the octave.* For example, on the piano, the nearest note to C is B on the one side (below), and C♯ (or D♭) on the other side (above). From B to C, and from C to C♯ (or D♭) are therefore both semitones. Similarly from F♯ to F♮, and from F♯ to G will be semitones; but from G to A will not be a semitone; for A is not the nearest note to G; G♯ (or A♭), comes between them.

6. There are two kinds of semitone. If we look at the two here given, one above, and the other below C♮,

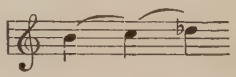
Ex. 1.



it will be seen that there is a difference between them. C and B are on two different places of the staff; one is on a line and the other on a space; but C and C♯ are both on the same place in the staff; but the latter note has an accidental before it. A semitone of which the two notes are on different degrees of the staff is called a *diatonic* semitone; the word "diatonic" means "through the tones, or degrees of the scale." A second meaning which is attached to the word will be explained later. When the two notes of the semitone are on the same degree of the staff, and one of the two is altered by an accidental (*e.g.*, C to C♯) the semitone is called *chromatic*, a word literally meaning "coloured." This use of the word will be further explained later.

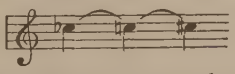
7. The word "semitone" means half a tone. A TONE is an interval, the two notes of which are *on adjacent degrees of the staff*, and which contains two semitones. But if we take two diatonic semitones one above another,

Ex. 2.



* In one sense this statement is not strictly accurate, as the "enharmonic diesis" (*i.e.*, the very small interval between two notes represented by the same sound on the piano, such as F♯ and G♭, or C♯ and B♯), is sometimes used in modulation. For ordinary purposes, however, the statement in the text is correct.

the resulting interval will be from B to D♭; which is not a tone as the two notes are not on the next degrees of the staff to one another. And if we take two chromatic semitones,

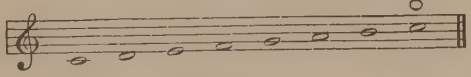
Ex. 3. 

it is equally clear that they will not make a tone; for now the resulting notes C♭ and C♯ are both on the same degree of the staff. We see therefore that of the two semitones which make a tone, *one must be diatonic and the other chromatic*. It matters not which of the two is the lower.*

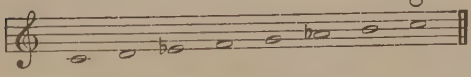
8. A SCALE is a succession of notes arranged according to some regular plan. Many different kinds of scales have been used at various times and in different parts of the world; in modern European music only two are employed, which are called the *diatonic* and the *chromatic* scale.

9. The word "diatonic" has been already explained in § 6 as meaning "through the degrees." A diatonic scale is a succession of notes in which there is one note, neither more nor less, on each degree of the staff—that is to say, on each line and space. The way in which the diatonic scales are constructed will be explained later (*see* Chapter II); at present we simply give the forms of them. There are two varieties of the diatonic scale, known as the *major* (or greater) and *minor* (or less) scale from the nature of the interval between the first and third notes of the scale.

MAJOR SCALE.

Ex. 4. 

MINOR SCALE.

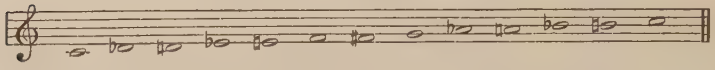
Ex. 5. 

Other forms of the minor scale frequently to be met with will be explained later. It will be seen that each of these scales contains only seven *different* notes. This is because the eighth note, or OCTAVE (*Latin*, "octavus" = eighth), is a repetition of the first note at a different pitch; and from this note the series recommences.

* The two semitones composing a tone are not of exactly the same size. A diatonic semitone is larger than a chromatic; neither semitone is therefore exactly *half* the tone; but as the difference is of no practical importance in harmony, the student need not regard it. It is only mentioned here for the sake of accuracy.

10. A *chromatic* scale is a scale consisting entirely of semitones, and it is called chromatic because some of its notes require accidentals (flats or sharps) before them (§ 6).

Ex. 6.



As will be explained later, the chromatic scale is frequently written in a different way from that here given; but, however written, it equally consists of semitones.

11. The different degrees of the diatonic scale (§ 9) are known by different names, with which it is necessary that the student should be perfectly familiar, as they are of constant occurrence. The first note of the scale is called the Tonic, or Key-note. This is the note which gives its name to the scale and key. The scales in § 9, for instance, are the scales of C major and C minor, and it will be seen that they both begin with the note C. The term "tonic" is used in harmony much more frequently than "key-note." The most important note in a key after the tonic is the fifth note of the scale. For this reason it is called the Dominant, or ruling note of the key. The fourth note of the scale lies at the same distance *below* the tonic that the fifth note lies *above* it. This will be seen at once by beginning at the top of the scale and descending. This fourth note (the next in importance to the dominant), is therefore called the Subdominant, or lower dominant. We have now got appropriate names for the three chief notes in the key.

12. About midway between tonic and dominant lies the third note of the scale. We shall see presently that in the major scale it is rather nearer to the dominant, and in the minor rather nearer to the tonic; but, roughly speaking, it is in the middle between the two. It is therefore called the Mediant, that is, the middle note. The sixth degree of the scale lies midway between the tonic and subdominant, just as the third lies between tonic and dominant. We therefore call this sixth note the Submediant, or lower mediant. Some writers on harmony call this note the "Superdominant," or note above the dominant; but the name Submediant is much more usual, and in every way preferable. The second note of the scale is called the Supertonic, *i.e.*, the note above the tonic; and the seventh note of the scale, which, it will be seen later, has a very strong tendency to lead up, or rise to the tonic, is on that account called the Leading Note. It is sometimes, though rarely, called the "Subtonic," from its position as the next note below the tonic.

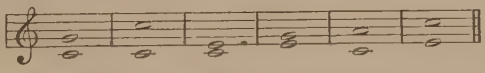
13. Having shown the origin and meaning of these different names, we will now tabulate them.

First Degree of the Scale	=	Tonic (Key-note).
Second " "	=	Supertonic.
Third " "	=	Mediant.
Fourth " "	=	Subdominant.
Fifth " "	=	Dominant.
Sixth " "	=	Submediant (Superdominant).
Seventh " "	=	Leading Note (Subtonic).

14. Before proceeding to treat of the names and classification of Intervals, it will be needful to define and explain two terms which we shall very frequently have to use in speaking of them. These are the terms Consonance and Dissonance.

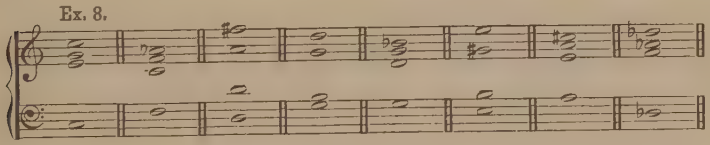
15. A consonant interval, or Consonance, is a combination of two sounds, which by itself produces a more or less complete and satisfactory effect, *i.e.*, which does not necessarily require to be followed by some other combination. For example, if the student will strike on the piano any of the following pairs of notes, pausing between each,

Ex. 7.



he will find that each is more or less satisfactory. A consonant chord is a chord of which all the notes make consonant intervals with one another.

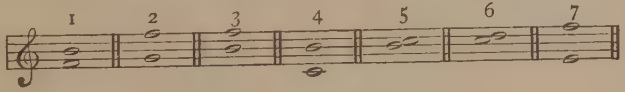
Ex. 8.



Let the student play each of these chords separately on the piano—they are not intended to be connected—and he will find that each by itself produces a satisfactory effect. When he has learned, later in this chapter, which are the consonant intervals, he will see that no others have been used in these chords.

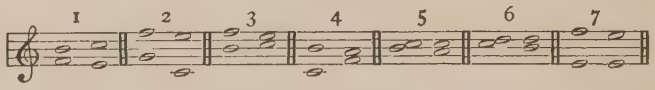
16. A dissonant interval, or Dissonance, is a combination of two notes which by itself produces an impression of incompleteness, so that the mind urgently feels the need of something else to follow. Let the student strike on the piano the following pairs of notes, pausing, as before, after each.

Ex. 9.



Everyone will feel the incomplete effect of these combinations, and that they require to be followed by something else to be satisfactory. Let us try. We will put after each of these dissonances a consonance, and it will be at once felt that the completeness which was before wanting has now been obtained.

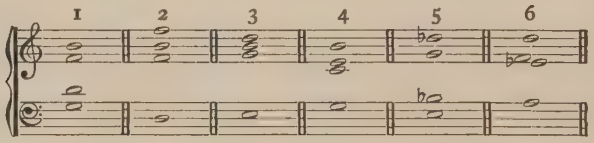
Ex. 10.



The consonance which follows the dissonance is called the Resolution of the dissonance. The laws according to which dissonances are resolved will be learned later.

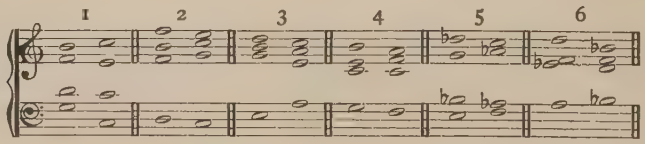
17. A dissonant chord, or Discord,* is a chord which contains at least one dissonance among the intervals made between the various notes. Like a dissonant interval, a dissonant chord has by itself an incomplete effect. Let the student play the following dissonant chords, and he will feel this.

Ex. 11.



Now, as before with the dissonant intervals, let us put after each chord, a consonant chord for its resolution. The satisfactory effect is felt at once. In general, it may be said that consonance is a position of rest, and dissonance a position of unrest.

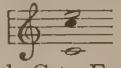
Ex. 12.



18. Intervals are always reckoned upwards, unless the contrary be expressly stated. Thus "the third of C" always means the third above C; if the third below is intended, it must be so described. The number of an interval is always computed according to the number of degrees of the scale that it contains, including both the notes forming the interval. Thus from C to E is called a *third*, because it contains three degrees of the scale, C, D, E. Beginners are apt to get confused on this point, and

* The term "Discord" is also sometimes applied merely to the dissonant note itself.

to think of D as the first note above C, and E as the second. But the note C is itself counted as the first note of the interval. Similarly, from G to D is a fifth, from F to D a sixth; and so on in all other cases. The same reckoning, but in the reverse direction, applies to the intervals below. Thus A is the third below C, D is the fourth below G, etc. Let the student examine the major scale of C in § 9, and he will find within the compass of the octave there given two 7ths, three 6ths, four 5ths, five 4ths, six 3rds, and seven 2nds. It will be a useful exercise for him to discover them for himself.

19. An interval larger than an octave is called a *compound* interval. Thus the interval  is compounded of the octave, C to C, and the third, C to E. (The octave is printed here as a small note.) Obviously, in addition to the third at the top, the interval contains the seven notes of the lower octave from C to B. The upper C is already counted as part of the third. Thus the number of a compound interval is always 7 more than that of the simple interval to which the octave is added. Therefore,

A Compound	2nd	=	A 9th.
"	3d	=	A 10th.
"	4th	=	An 11th.
"	5th	=	A 12th.
"	6th	=	A 13th.
"	7th	=	A 14th.

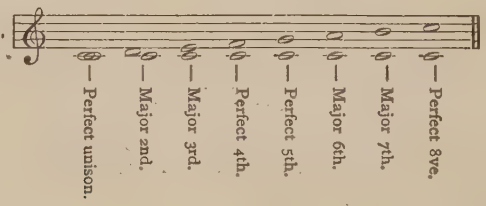
We never speak of a "compound octave." Such an interval would be called a "double octave." Excepting the 9th, 11th, and 13th, with which we shall presently make closer acquaintance, all compound intervals are, for purposes of harmony, identical with the simple intervals to which they correspond. There is no difference in the treatment of a 3d and a 10th, a 5th and a 12th, or a 14th and a 7th. We, therefore, never use the names of these compound intervals in harmony.

20. If the student will examine the intervals contained among the notes of the diatonic scale (as we recommended in § 18), he will see that those which have the same name are not always of the same size. From C to E, for instance, is a third, and so is from D to F; but the former contains two tones (C to D and D to E), and the latter only one tone (D to E) and a semitone (E to F). Similarly the fourth from C to F is smaller than the fourth from F to B, and the sixth from C to A is larger than the sixth from E to C. And if we put accidentals before some of the notes, we shall get still further differences. It is

clear, therefore, that the general description of an interval as a second, third, fourth, etc., is not sufficiently precise to show its exact nature. In order to obtain greater accuracy, intervals are described by one or other of the following adjectives:—*perfect*, *major*, *minor*, *augmented*, and *diminished*. These terms we shall now explain.

21. As a basis for our classification, we take the major scale, and first reckon all the intervals upwards from the tonic, that is, taking the tonic in each case as the lower note of the interval. It is evident that we shall obtain in succession a 2nd, a 3rd, a 4th, a 5th, a 6th, a 7th, and an octave. To these may be added the unison, which, though not strictly speaking an interval, is reckoned as such. Of these intervals, the unison, 4th, 5th, and 8th, are termed *perfect*, and the 2nd, 3rd, 6th, and 7th *major*.

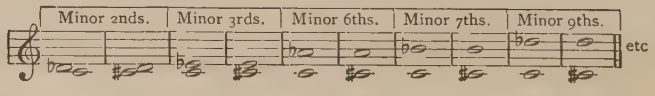
Ex. 13.



The compound intervals have the same prefixes as the simple ones; thus C to D♯ will be a major ninth, C to A♭ a minor thirteenth, and so on.

22. An interval which is a chromatic semitone less than a major, is called a *minor* interval. A major interval can be changed into a minor, either by raising the lower note or lowering the upper one a chromatic semitone. Thus from C to E is a major third. If we raise the lower note to C♯, the interval C♯ to E is a minor third. Or if we leave the C alone, and lower the E to E♭, we also get a minor third from C to E♭. But if we alter either note a *diatonic* semitone, we change the name of the note, and therefore of the interval. Thus, C to E being a major 3rd, if we raise C to D♭ instead of to C♯, the interval from D♭ to E is no longer a *third* at all, but a second, of a kind which we shall explain directly. Similarly if we lower E to D♯ instead of E♭, C to D♯ is a second; for the two notes are on adjacent degrees of the staff.

Ex. 14.



23. An interval which is a chromatic semitone larger than a perfect or a major interval is called *augmented*. Here we reverse the process of making the minor intervals, and we either raise the upper note, or lower the lower note, by means of an accidental. Thus C to F being a perfect 4th, C to F♯ or C♭ to F♮ will be an augmented 4th. Again C to A is a major 6th; and C to A♯ or C♭ to A♮ is an augmented 6th. The augmented 3rds and 7ths are not used in harmony; augmented 2nds, 4ths, and 6ths are frequently, and augmented 5ths sometimes to be met with.

24. An interval which is a chromatic semitone less than a perfect or a minor interval is called *diminished*. As in the cases just spoken of, it is immaterial to the nature of the interval which of the two notes composing it be altered. Let the student refer to the table of minor intervals in § 22. We obviously cannot diminish the minor 2nd, for if we lower D♭ to D♭♭, or raise C to C♯, we shall in either case get an interval smaller than a semitone—what is called an "enharmonic" interval (§ 5, *note*)—and it has been already said (§ 5) that the semitone is the smallest interval used in music. The same objection will apply to a diminished 9th. But diminished 3rds, 4ths, 5ths and 7ths, especially the last, are of very frequent occurrence.

25. When the relative position of two notes is changed by placing one of them an octave lower or higher than before, the lower one thus becoming the upper, and the upper the lower, the interval is said to be *inverted*.

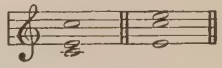
Ex. 15.

Here the first interval is a perfect fifth; if C be placed above G, the interval is inverted, and its inversion is a perfect fourth. The *number* of the inversion of an interval can always be found by subtracting the number of the interval from 9. In the above example it is seen that an inverted 5th becomes a 4th (9–5 = 4); in the same way a 3rd becomes a 6th, a 2nd a 7th, etc. A unison cannot strictly speaking be inverted, as it has no higher or lower note; but it is said to be inverted when one of the two notes is put an octave higher or lower. Similarly, an octave reduced to a unison is generally said to be inverted. Perfect intervals remain perfect when inverted; major intervals become minor, and minor major; augmented intervals become diminished, and diminished augmented.

26. The reason of the rule just given will become clear to the student if he observes that the inversion of any simple interval is the difference between that interval and an octave.

Thus a major 3rd, C to E, and its inversion, a minor 6th, E to C, will together make an octave, either C to C, or E to E,

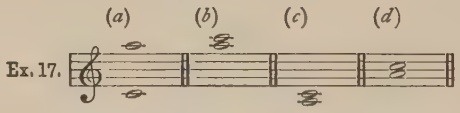
Ex. 16.



according to the note of the 3rd of which the position is changed. A third of any kind taken from an octave must leave a sixth; and if a *larger* (major) third be taken out, a *smaller* (minor) sixth will be left; and conversely, if a smaller (minor) third be taken from the octave, a larger (major) sixth will be left. Evidently the same reasoning will apply to augmented and diminished intervals.

27. As a compound interval is larger than an octave (§ 19), it is clear that raising or lowering either note an octave will not change their relative positions, and will produce no inversion. It will therefore be necessary to raise or lower one note two octaves, or (which produces the same result), to raise one note an octave and at the same time to lower the other an octave. We will take a major thirteenth, and invert it in each of these ways:

Ex. 17.



At (*a*) is a major thirteenth; at (*b*) the lower note is raised two octaves; at (*c*) the upper note is lowered two octaves, and at (*d*) the lower note is raised an octave while the upper is lowered an octave. In each case the resultant inversion is the same—a minor third, which is also the inversion of a major sixth. The inversion of any compound interval is always the same as that of the simple interval from which it is compounded.

28. Intervals are divided into two classes, consonant and dissonant. These terms have been already explained in §§ 15, 16. The consonant intervals are the unison, octave, perfect fifth, perfect fourth, major and minor third, and major and minor sixth. All other intervals of every kind—all seconds, sevenths, ninths, elevenths, and thirteenths,* and all augmented and diminished intervals—are dissonant.

29. The consonant intervals are further subdivided into *perfect* and *imperfect* consonances. The unison, octave, perfect fourth, and perfect fifth are the perfect, and the major and minor thirds and major and minor sixths are the imperfect consonances.

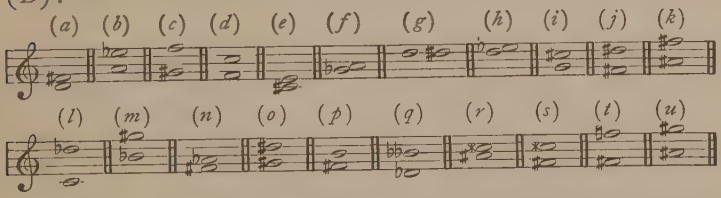
* The thirteenth, being the octave of the sixth, is itself consonant (§ 422), but it is always treated as a dissonance in the chords in which it is found. (*See* Chapter XIV.)

Neither note of a perfect consonance can be altered by an accidental—that is, raised or lowered a chromatic semitone (§ 22)—without changing the interval into a dissonance. But a major third or sixth can be changed to a minor, or *vice versa*—a minor into a major—and still remain a consonance. This is one difference between perfect and imperfect consonances.

30. We shall conclude this chapter by giving a table of all the intervals and their inversions within an octave from the note C. (See next page.) The student is advised to make similar tables for himself from other notes. It will be seen that the inversion of a consonance is always a consonance, and of a dissonance always a dissonance.

Exercises to Chapter I.

(1) Write the names of the following intervals, indicating those that are consonant by (C) and those that are dissonant by (D):—



(2) Write the following intervals:—A minor second of B♭ and D♯; a major second of B♮ and G♭; a diminished third of C♯, E♯, and B♭; a minor third of G♯ and C♭; a major third of A♭, F♮, and D♯; a diminished fourth of F♯, A♮, and D♯; a perfect fourth of B♭, G♮, and A♯; an augmented fourth of D♭, F♯, and C♯.

(3) Write the diminished fifth of B♭, F♮, G♯, and C♭; the perfect fifth of F♮, B♮, E♭, D♯, F×, B♭♭, E♭♭; the augmented fifth of E♮, A♭, C♯, G♮, and B♭; the minor sixth of D♭, G♯, E♭, and G♭; the major sixth of A♭, B♮, E♮, D♯, and C♭; the augmented sixth of E♭, G♮, and A♮; the diminished seventh of E♯, F×, A♮, and C♮; the minor seventh of B♮, A♭, and F♯; the major seventh of C♯, F♮, G♯, E♭, and B♮; and the diminished octave of D♮, B♭, and F×.

(4) Write the minor ninth of F♯, B♭, D♯, G♮, and E♮, the major ninth of F♮, A♭, E♯, G♯, and D♭; the eleventh of E♭, A♯, C♯, and F♯; the minor thirteenth of E♭, G♯, D♮, G♭, F♮, and D♭; and the major thirteenth of G♮, C♭, A♮, E♭, and B♮.

(5) Write the inversions of all the intervals (*a*) to (*u*) in Exercise I, and name each, adding (C) or (D), according to whether they are consonant or dissonant.

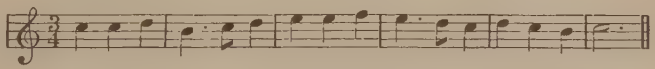
Octave.
Perfect
Perfect
Unison.
Sevenths.
Major
Minor
Diminished
Minor
Major
Augmented
Seconds.
Sixths.
Augmented
Major
Minor
Diminished
Minor
Major
Thirds.
Fifths.
Augmented
Perfect
Diminished
Diminished
Perfect
Augmented
Fourths.
Fourths.
Augmented
Perfect
Diminished
Diminished
Perfect
Augmented
Fifths.
Thirds.
Major
Minor
Diminished
Minor
Major
Augmented
Sixths.
Seconds.
Augmented
Major
Minor
Diminished
Minor
Major
Sevenths.
Unisons.
Augmented
Perfect
Diminished
Perfect
Octaves.
INTERVALS
INVERSIONS

CHAPTER II.

KEY, OR TONALITY.

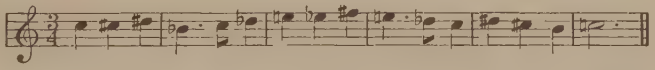
31. One of the first things which it is necessary that the student should understand is what is meant when we speak of the *Key* of a piece of music. In order that music should produce a satisfactory effect, it is necessary that the notes, whether taken singly, as in a melody, or combined, as in harmony, should have some definite and clearly recognizable relation to one another. For example, if the first half of "God save the King" be played on the piano—

Ex. 18.



everyone can hear what is commonly called the *tune*—that is, can feel that the notes following each other have some definite relation to the first and last note, and to one another. But if we take the very same notes on the staff, and alter several of them by the addition of flats and sharps, thus—

Ex. 19.



we not only distort the melody beyond recognition, but it ceases to be *music* at all; for the notes as they follow one another have no connection, no common bond of union, so to speak. In other words, they are in no *key*.

32. From the very infancy of music, the necessity for the relationship of notes to one another has always been felt, though the degree of relationship and its nature have differed as the art has progressed. In its modern sense Key may be thus defined:—

A collection of twelve notes within the compass of an octave, of which the first is called the Tonic, *or* Key-Note, *to which note the other eleven bear a fixed and definite relationship.*

33. The student must remember that this definition does not imply that all music in one key must lie within the compass of an octave, but only that all the notes used in one key *can be found* within that compass. Thus in Ex. 6, all the notes of the key lie between the two C's.

34. The fundamental principle for the development of modern music cannot be better stated than in the words of Helmholtz (*Sensations of Tone*, p. 383): "The whole mass of tones and the connection of harmonies must stand in a close and always distinctly perceptible relationship to some arbitrarily selected tonic, and the mass of tone which forms the whole composition must be developed from this tonic, and must finally return to it."

35. If the student will compare the two scales (Exs. 4 and 6), given in our last chapter (§§ 9, 10), he will see that the latter (the chromatic scale), contains five notes more than the former (the diatonic), and that each of the additional five notes has an accidental before it. Both these scales are in the key of C major, which will be thus seen to contain two elements, the diatonic and the chromatic. The former includes all those notes which are in conformity with the key-signature, and the latter all those which are inflected by an accidental. When, later in this volume, we come to speak of the chromatic notes and chords in a key, we shall see that they are borrowed from neighbouring keys. They therefore occupy quite a different and subordinate position in the key to the diatonic notes and chords; it is only of the latter that we have to speak in the present chapter.

36. A CHORD is a combination of not fewer than three notes, placed each at the distance of either a major or a minor third above the note next below it. The lowest note, upon which the chord is built, is called its *Root*.* The most important, and the most frequently used chords are those called COMMON CHORDS, which are made by placing either a major or minor third and a *perfect fifth* above the root. If the third be major, the chord is called a major chord; if the third be minor, it is called a minor chord.

37. Every key has two "modes," the major and the minor,† so called from the interval between the tonic and the mediant —the third next above it (§ 9). A key which has a major third above the tonic is called a "major key," and one that has a minor third above the tonic is called a "minor key." The

* Much trouble is sometimes caused to students from the word *Root* being used in two senses by theorists—as the lowest note of any combination of thirds, and also as the fundamental tone in the key from which the combination is harmonically derived. In order to avoid confusion, the word *Root* will in this book always be employed in the former sense, and the note from which the combination is ultimately derived will be called its *Generator*. This distinction will become quite clear as we proceed.

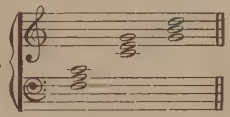
† These are often spoken of as two distinct keys; but it is better, and more accurate, to regard them as two modes of the same key, as their three chief, or "primary" notes—the tonic, dominant, and subdominant, are identical. This will be seen by comparing the two scales given in Exs. 4 and 5.

scales given in Examples 4 and 5 are therefore respectively the scales of "C major" and "C minor." These names are more convenient and less cumbrous than "the major" and "the minor mode of C."

38. It is implied in what is said in §§ 32, 34, that the tonic is the most important note in every key. Most pieces of music begin, and every piece should end, with a chord upon the tonic. Next in importance to the tonic are those notes in the key which are the most nearly related to it, that is, those which make perfect consonances with it.* If the student will look at the scales in Exs. 4, 5, he will see that the only notes which make perfect consonances with C are the dominant G (a fifth above), and the subdominant, F (a fifth below). The tonic, dominant, and subdominant are therefore called the three Primary Notes of every key.

39. Let us first take the major mode of C, which, for the future we shall always call by its usual name, the key of C major. We select this key, because it is what is known as the "natural" key, that is, its diatonic notes require neither sharps nor flats. To obtain the diatonic material of the key, we take the three primary notes, placing the tonic in the middle, with the dominant above, and the subdominant below, and make each of these notes the root of a common chord. In a major key, the three primary chords are all major.

Ex. 20.



C: IV I V

40. If the student will compare these chords with the major scale given in Ex. 4, he will see that every note of that scale is to be found in one or other of these three primary chords, though some of them (F, A, and D), are not in the same octave. But it is clear that the entire diatonic contents of the key are derived from these chords.

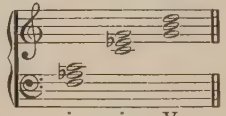
41. It is very desirable that the student should from the very commencement accustom himself to think of all chords in their tonal relation to the key to which they belong. In order to do this with more certainty, he should indicate the root beneath every chord. For this purpose the plan adopted in the example just given (first introduced, we believe, by Gottfried Weber), should be followed. A letter followed by a colon shows the key; if this be major, the letter is a capital, as above: C: = C major. For C minor a small letter (c:) will be used.

* See Appendix B for the reason why the perfect consonances are the most nearly related notes.

The Roman numerals under each chord show the *degree of the scale* which is the root of the chord. If, as here, the thirds of the chords are *major*, the numerals are capital letters; if the thirds are *minor*, small numerals are employed, as will be seen when we come to speak of the minor key. Thus, in Ex. 20, IV, I, and V show that the roots are the fourth, first, and fifth degrees of the scale, and, as the numerals are all capitals, that the chords are all major. Modifications of, and additions to these signs will be dealt with as the necessity arises. The system is perfectly simple, and we strongly advise all students to take the trouble to master it from the first.

42. If the student will look at the scale of C minor (Ex. 5), he will see that its three primary notes are the same as those of C major. To obtain the diatonic material of the minor key, we build common chords on these three notes; but with the tonic and subdominant we shall now have *minor* chords above the roots, while for the dominant we still have a major chord.

Ex. 21.



After what was said in § 41, the student should have no difficulty in understanding the way in which the key and roots are marked. The reason a major chord is taken upon the dominant is, that if a minor chord were taken, its third (B♭), would be a tone, instead of a semitone, below the tonic, and the key would have no "leading-note." It will be seen later that a leading-note is equally necessary with major and with minor keys.

43. Looking for a moment at the chords given in Ex. 21, it will be seen that all consist of a major and a minor third placed one above another, and that the third which gives its name to the chord is always the lower of the two. It will further be noticed that the only notes which differ in the two keys are the third and sixth of the scale, which are a semitone lower in the minor than in the major key. To change a major key into its "tonic minor" (*i.e.*, the minor with the same tonic), it is only necessary to flatten the third and sixth notes. The converse process will evidently change a minor key into its tonic major.

44. Let us now turn back to the two scales given in Ex. 4 and 5, which contain all the diatonic notes of C major and C minor.* It will be seen that in the major key the semitones

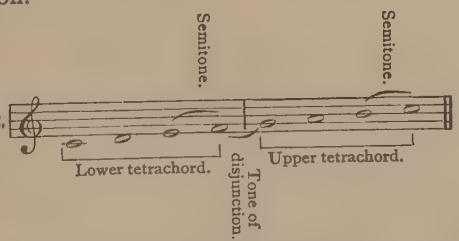
* This statement is correct as regards the *harmonies* of the key; but when we come to treat of the minor key (Chap. VII) it will be seen that there are two other notes which can be employed *melodically* as diatonic notes.

come between the third and fourth, and the seventh and eighth degrees of the scale; while in a minor scale there are semitones between the second and third, fifth and sixth, and seventh and eighth degrees. Between the sixth and seventh degrees of a minor scale is the interval of the augmented second—the only interval greater than a tone to be met with in any scale.

45. In older music many other forms of diatonic scale were in use besides the two that we have given (See Appendix A). These various forms were known as "modes." All the modes contained the same notes; but each began on a different part of the scale, and consequently had the semitones between different degrees. At present only two modes, the major and minor, are employed*; the difference between one major or minor key and another is solely a difference of pitch. We have hitherto spoken only of the key of C; we shall now show that in keys with any other tonic than C sharps or flats become necessary. For the present we speak only of major keys.

46. If we examine the diatonic major scale of eight notes beginning from the tonic, we shall see that it can be divided into two sections of four notes each, and that these two sections are in their construction precisely similar, each containing the interval of a semitone between the two upper notes, and a tone between the other notes. A series of four notes thus arranged is called a *Tetrachord*—a Greek word signifying four strings; and the scale consists of two such tetrachords placed one above the other with the interval of a tone between the highest note of the lower tetrachord and the lowest note of the upper. This tone, separating the two tetrachords, is called the "tone of disjunction."

Ex. 22.

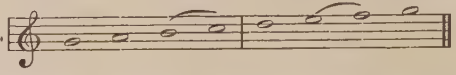


It is important to notice that the lower tetrachord begins with the tonic, and the upper with the dominant—the next most important note to the tonic. They may therefore also be called the tonic and dominant tetrachords.

47. If we now take G as a tonic, or in other words make the upper tetrachord of C the lower tetrachord of a new scale,

* Occasionally, even in modern music, the older modes are used, if a special archaic or ecclesiastical effect is desired.

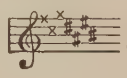
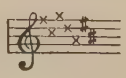
we shall find that if we leave all the notes unaltered the upper tetrachord will have its semitone in the wrong place—

Ex. 23. 

Here the semitone is between the second and third notes of the upper tetrachord, instead of between the third and fourth. To correct this, F (the subdominant of C), must be raised to F♯; and we now have a semitone between the "leading note" (§ 12) and the tonic, as in the key of C. It is important to notice that the sharpened note is the leading note of the new key, and that the sharp, because it belongs to the key, is marked once for all in the key-signature.

48. If we continue to take the upper tetrachord of each key as we obtain it as the lower tetrachord of a new key—*i.e.*, if we make each dominant into a new tonic, we shall clearly have to introduce a fresh sharp for each new leading note. The student is recommended to work out all the scales rising by fifths after the pattern given above. The result will be the following:

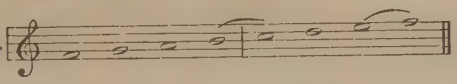
Tonic.	*Signature.*
C	None.
G	F♯.
D	F♯, C♯.
A	F♯, C♯, G♯.
E	F♯, C♯, G♯, D♯.
B	F♯, C♯, G♯, D♯, A♯.
F♯	F♯, C♯, G♯, D♯, A♯, E♯.
C♯	F♯, C♯, G♯, D♯, A♯, E♯, B♯.

49. It would be possible to continue this series, of which the next tonic would be G♯; but as this would involve the use of a double-sharp, it is more convenient instead of G♯ to take its "enharmonic" (§ 5 *note*) A♭, which for all practical purposes is the same note. We never therefore find a piece of music written with the signature of the key of G♯ major, though the key is occasionally used incidentally in the course of a piece. If we continue this series to its extreme limit, the next tonic will be D♯, then will follow A♯, E♯, and B♯. We can go no further than this, because B♯ is the enharmonic of C, and we have now completed the "circle of fifths," as it is termed, going through the sharp keys with ascending fifths. The inconvenience of writing in these extreme keys is that they necessitate double-sharps in the signature. Thus the signature of A♯ major would be written  ; and of B♯ major  ;

We shall show later in this chapter how to find the key-signature of these "extreme keys," as they are called. Observe that in the series we have just given the tonics always *rise by perfect fifths.*

50. All these sharp keys have been obtained by making the upper tetrachord of one key the lower tetrachord of the next, or, in other words, by making the dominant of one key the tonic of the following. If we now reverse the process, and make the lower tetrachord into an upper one of a new key, we get a different series. As before we begin with the key of C.

Ex. 24.



51. If we examine the lower tetrachord here, we see that it has no semitone; we also see that there is only a semitone between the two tetrachords, instead of the "tone of disjunction." In fact the highest note of the lower tetrachord is a semitone too high. We therefore lower this note with a flat, making it B♭, and the scale of F is now correct. Just as the scale of G, the fifth *above* C, requires a sharp, so the scale of F, the fifth *below* C, requires a flat; and just as each dominant when taken as a tonic, required one additional sharp, it will be evident that each new subdominant (the fifth below the tonic), when treated as a tonic will require an additional flat. If the student has fully understood the explanations given above, it will be needless to repeat the process of forming the scales from the tetrachords. The series of descending fifths with their signatures will be as follows:

Tonic.	*Signature.*
C	None.
F	B♭.
B♭	B♭, E♭.
E♭	B♭, E♭, A♭.
A♭	B♭, E♭, A♭, D♭.
D♭	B♭, E♭, A♭, D♭, G♭.
G♭	B♭, E♭, A♭, D♭, G♭, C♭.
C♭	B♭, E♭, A♭, D♭, G♭, C♭, F♭.

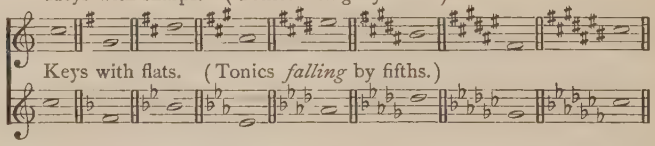
It is of course possible to continue the series further, as with the sharp keys, but as so doing would involve the use of double-flats in the signature, it is more convenient to use the enharmonic keys which contain sharps. For instance, instead of the key of F♭, that of the E♮ is taken, and so on with the others.

52. It should be noticed that in passing to the sharper key—*i.e.*, taking the dominant as a new tonic—it is always the subdominant of the old key which is sharpened to become the new

leading note; and conversely in passing to a flatter key—*i.e.*, taking the tonic as a new dominant, it is always the leading note of the old key which is flattened to become the new subdominant. Hence we obtain the easy rule for finding the tonic of any major key from the signature. In sharp keys, the last sharp is always the leading note, and in flat keys, the last flat is always the subdominant. When we know the leading note or the subdominant of any key, it is a matter of very simple calculation to find the tonic.

53. We defer for the present the discussion of the signatures of minor keys; these will be more easily explained, and better understood later. We now give the signatures of all the major keys, commencing with C major, and marking the tonic of each key.

Ex. 25.



It will be seen that the last three sharp keys are enharmonics of the last three flat keys; B ♮, with five sharps, being the enharmonic of C ♭, with seven flats; while F ♯ (six sharps), and G ♭ (six flats), likewise C ♯ (seven sharps), and D ♭ (five flats), are also enharmonics of one another. Let it be particularly noticed that the number of sharps in any one of the sharp keys added to the number of flats in its enharmonic key always amounts to the same number, 12.

54. By bearing this in mind, we shall be able to find the signature of any of the extreme keys referred to in § 49. All that is needful is to notice the number of flats or sharps in the enharmonic of the key whose signature we wish to ascertain, and to subtract that number from 12. The remainder gives the required signature, and it must be remembered that all numbers above seven will represent *double* sharps or flats, as the case may be.

55. To make this quite clear, we will find the signatures of the two keys spoken of in §§ 49 and 51—G ♯ and F ♭ major. G ♯ is the enharmonic of A ♭, which has four flats; 12—4 = 8; therefore G ♯ has eight sharps—*i.e.*, one double-sharp. Similarly, F ♭ is the enharmonic of E ♮, with four sharps; it therefore will have eight flats, or one double-flat. Of two enharmonic keys, one will always be a sharp and the other a flat key.

56. There is another method of calculating the signatures of these extreme keys, which some students may perhaps find easier than that just given. If we compare the signatures of C ♯

and C♭ in Ex. 25 with that of C♯, we shall see that the former has seven sharps more, and the latter seven flats more than the "natural" key. This must obviously be so, because, if we put a sharp or flat before the tonic, it is evident we must put one before every other degree of the scale; otherwise the semitones will not remain in the same places. Applying this reasoning to other keys, it is clear that the key of A♯ for example, must have ten (3 + 7) sharps, and that every note which in the key of A was a natural will now be a sharp, while every note which before was a sharp will now be a double-sharp. Similarly, as B♭ has two flats, B♭♭, must have nine (2 + 7), with two double-flats; and so on in every case. The order of double-sharps and double-flats will evidently be the same as that of sharps and flats, beginning with F× on the one side and B♭♭ on the other. We have already said (§ 49), that no entire piece of music is ever written in these extreme keys; but their incidental employment in modern music is frequent enough to render it advisable for the student to be acquainted with them.

Exercises to Chapter II.

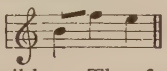
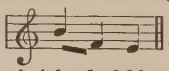
(1.) Write the three primary chords in the keys of D, E♭, F♯, G♭, A♮, and B♭. Prefix the key-signature in each case.

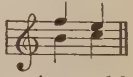
(2.) Write major scales (one octave) from the following notes, putting no key-signature, but inserting a flat or sharp before each note that requires one—E, A♭, F♯, F♭, G♯, B, B♭, A♯, E♭♭.

CHAPTER III.

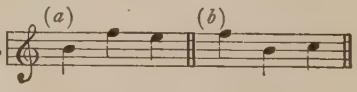
THE GENERAL LAWS OF PART-WRITING.

57. In Harmony any number of notes, from two upwards, may be sounded at one time. If each chord contain four notes, the harmony is said to be in four *parts*, if each contain three notes, the harmony is in three parts, and so on. Each part in the harmony has generally the same relative position to all the other parts; that is to say, all the upper notes of the harmony form one part, all the lowest notes another part, all the notes next above the lowest another, etc. The progression of these parts may be considered in two aspects; either as *melodic* progression, that is, the motion of each part regarded singly; or as *harmonic* progression, that is, the motion of each part with relation to all the other parts. Both these kinds of progression are governed by certain general laws, which will now be explained.

58. The rules for *melodic progression* are few and simple. A good melody is one that flows naturally and easily; it is therefore best either to proceed by step of a second (called "conjunct motion")—that is, to the next note above or below; or by leap ("disjunct motion"), of a consonant interval (§ 15). If, as sometimes happens, it is necessary to leap by a dissonant interval, a diminished interval is to be preferred to an augmented one. Thus:  is better than  , though either is possible. The former is a diminished fifth, and the latter an augmented fourth.

59. If a part move by a diminished inverval it ought to return to a note within the interval, and not continue in the same direction. The best progression for any dissonant interval is, that the second of the two notes forming the interval should proceed to that note which is the resolution of the dissonance (§ 17) made, if the two notes are sounded together. For instance, the student will learn later (Chap. VIII.), that the diminished fifth just given will resolve thus: 

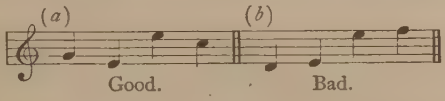
Therefore F, coming *after* B, moves to the E, just as it would do were it sounded *with* B (Ex. 26 *a*). Had F been the first note and B the second, B would, for the same reason, have gone to C (Ex. 26 *b*).

Ex. 26. 

60. An augmented interval should seldom be used in melody unless both the notes belong to the same harmony. But the interval of the augmented second, which we find in the minor scale (Ex. 5) between the sixth and seventh degrees may be used more freely.

61. A large interval in the melody is best approached and quitted in the opposite direction to that in which it leaps.

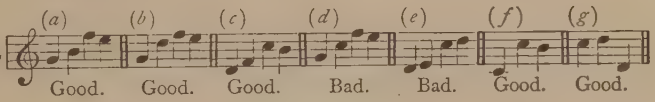
Ex. 27.



At (*a*) will be seen the leap of an octave *upwards* between the second and third notes. It is therefore much better that the first of the two notes should be approached downwards, and the second E left downwards, than they should be approached and left in the same directions, as at (*b*).

62. It is seldom good to introduce a leap of a seventh in the melody, with one intermediate note, unless all three notes form part of the same chord, the leaps be upwards, and the last note fall one degree.*

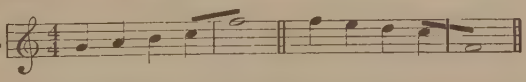
Ex. 28.



At (*a*) (*b*) (*c*) the first three notes all belong to the same harmony—a chord of the seventh; at (*d*) (*e*) the intermediate note is not a note of the chord. Two successive leaps of a fourth, as at (*d*) are particularly objectionable. But if the intermediate note be the *octave* of either the first or second note of the interval of the seventh, as at (*f*) (*g*) above, the progression is good.

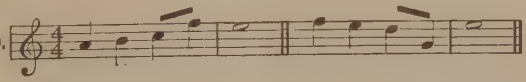
63. After two or three steps by conjunct motion, it is not good to leap *in the same direction* to an accented note:

Ex. 29.



But there is no objection to leaping in the same direction to an *unaccented* note:

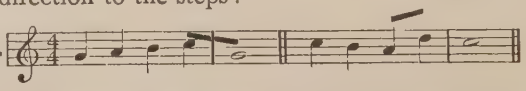
Ex. 30.



* The student will understand this rule better when he has studied the dominant discords: in his earlier exercises he had better avoid the progression altogether.

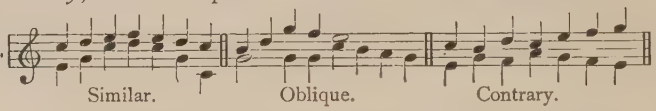
or to leaping either to an accented or an unaccented note in the *opposite* direction to the steps:

Ex. 31.



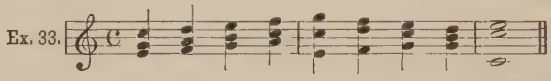
64. By *harmonic* progression, as has been said above, is meant the way in which the parts move in their relation to one another. There are three kinds of motion; *similar* (sometimes, though less frequently, called "parallel"), when two or more parts move in the same direction—up, or down; *oblique*, when one part moves up or down while another remains stationary; and *contrary*, when one part ascends while another descends.

Ex. 32.



If the music is in more than two parts, it is evident that at least two of these different kinds of motion must be combined, except when all are moving in similar motion, *e.g.*,

Ex. 33.



In this passage, in the first bar all three parts move in similar motion. Between the last chord of the first bar and the first chord of the second there is contrary motion between the two extreme parts, and oblique motion between each of the extreme parts and the middle part. Between the first and second chords of the second bar there is contrary motion between the upper part and each of the others, and therefore the two lower parts move by similar motion. The student can analyze the rest of the passage for himself in the same way.

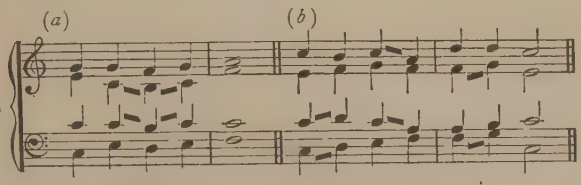
65. Most music is written in four-part harmony, and the parts are generally named after the four varieties of the human voice, being, in fact, often called "voices." The highest part is called the *treble*, or *soprano*, the next below this, the *alto*, the third part, counting downwards, the *tenor*, and the lowest part the *bass*. This refers to their relative rather than their actual positions; and it is important to remember that the lowest part of the harmony is called the bass, even where (as in Ex. 33) it is written in the treble staff.

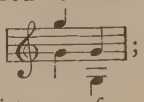
66. We shall now give the rules which the student must observe in part-writing. It is only right to say that these rules are not in all cases strictly adhered to by the great masters; the student will learn by experience, as his knowledge increases, when it is safe to relax them; but it may be laid down as a general principle that nobody can break rules with good effect till

he knows how to keep them. For the present, therefore, no licenses can be allowed.

67. Rule I. No two parts in harmony may move in unison, or in octaves with one another.

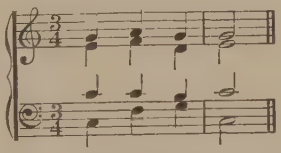
Ex. 34.



At (*a*) the alto and tenor are moving in unison in the second, third, and fourth crotchets. At (*b*) the tenor and bass are moving in octaves between the first and second crotchets; the soprano and tenor between the third and fourth; and the alto and bass between the fifth and sixth. Such passages are called *consecutive* unisons and octaves. It is important to remember that the repetition of *the same* octave or unison by two parts does not make consecutives, as the parts are not then *moving* in octaves or unisons. The same remark applies to the consecutive fifths forbidden in Rule 2. Neither is it considered to make consecutives if both parts leap an octave, *e.g.* :  ; because the repetition of the same notes at the distance of an octave does not change the harmony.

68. It must be said here that octaves will be found in most chords in four-part harmony; but they are not *consecutive* unless they occur *between the same parts.*

Ex. 35.

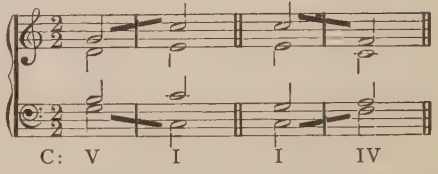


In this example each chord contains an octave of the bass note; but in the first chord the octave is between the tenor and bass, in the second between the alto and bass, in the third between the soprano and bass, and in the fourth between the tenor and bass again. No two of these octaves are therefore consecutive, and the passage is quite correct.

69. There is one exception to the prohibition of consecutive octaves. They are allowed *by contrary motion* between the primary chords (§ 39) of the key, provided that one part leaps

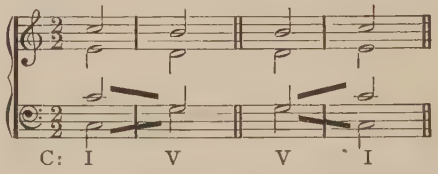
a fourth and the other a fifth.

Ex. 36.



A similar progression—from the unison to the octave, or the octave to the unison—is also not infrequent between primary chords. Evidently this will be between two adjacent parts of the harmony, mostly tenor and bass.

Ex. 37.

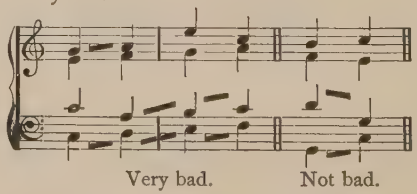


Though the progressions shown in Exs. 36, 37 are perfectly correct, it will be safer for *beginners* to avoid consecutive octaves altogether.

70. The rule prohibiting consecutive octaves does not apply to the doubling of a whole passage in octaves, such as is frequently found in pianoforte and orchestral music, nor to passages in which all the parts move in unisons and octaves. For instance, the familiar passage in Handel's "Hallelujah" chorus, to the words "For the Lord God omnipotent reigneth" is not considered as "consecutive octaves." Again, in Mendelssohn's St. Paul, the soprano and alto sing the choral "To Thee, O Lord, I yield my spirit" in unison, the harmony being in three parts throughout. But this is not called consecutive unisons.

71. RULE II. Consecutive perfect fifths by similar motion are not allowed between any two parts. They are, however, much less objectionable when taken by contrary motion, especially if one of the parts be a middle part, and the progression be between primary chords.

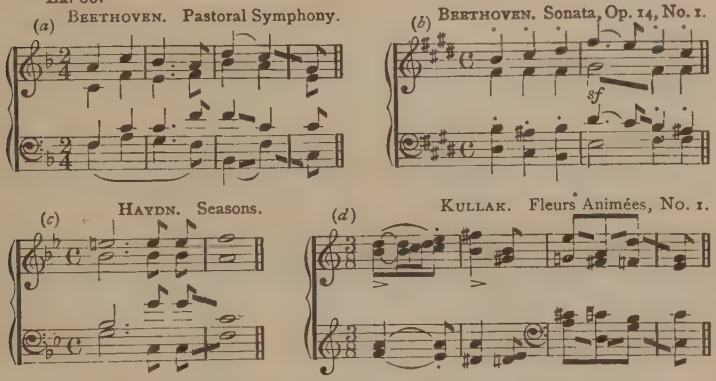
Ex. 38.



72. This rule is much more frequently broken by great composers than the rule prohibiting consecutive octaves. Consecutive fifths between the tonic and dominant chords are not

infrequently met with, as in the first and third of the following example:

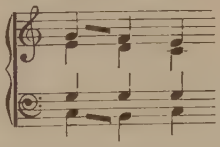
Ex. 39.



At (*a*) will be found in the third bar consecutive fifths by contrary motion between the tenor and bass; and from the third to the fourth bar, consecutive fifths between the extreme parts by similar motion. At the second bar of (*b*) are fifths between alto and tenor; at (*c*) are seen fifths by contrary motion between tenor and bass, and at (*d*) four consecutive fifths between extreme parts. These examples are not given for the student's imitation; experience is required to understand when they may be properly introduced; but it is needful to mention them here, for the sake of completeness. By beginners the prohibition of consecutive fifths must be strictly attended to.

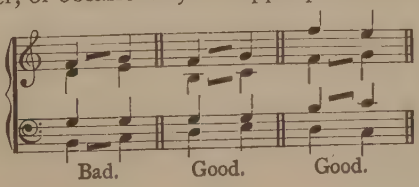
73. If one of the two fifths is diminished, the rule does not apply, *provided that the perfect fifth comes first.*

Ex. 40.



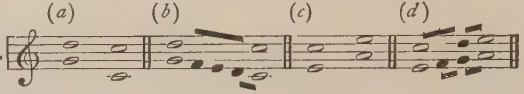
This progression is quite correct. But a diminished fifth followed by a perfect fifth is *forbidden* between the bass and any upper part, but *allowed* between two upper or middle parts, provided the lower, or occasionally the upper part moves a semitone.

Ex. 41.



74. If two parts go by similar motion to octaves or perfect fifths, such progressions are called "hidden" octaves or fifths.

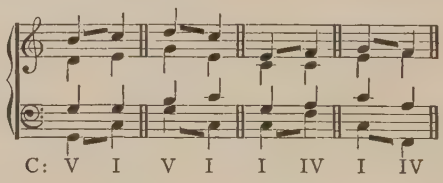
Ex. 42.



At (*a*) are two parts moving to an octave by similar motion. The lower part in leaping from G to C *passes over* the intermediate notes F, E, D, as shown at (*b*). If these notes are introduced, there will be consecutive octaves $\frac{D}{D}$ to $\frac{C}{C}$. Similarly at (*c*) the two parts leap to a fifth by similar motion. If the intermediate notes are inserted, as at (*d*), we see the fifths $\frac{C\ D\ E}{F\ G\ A}$. These octaves and fifths, being passed over, instead of sounded, are said to be *hidden*.

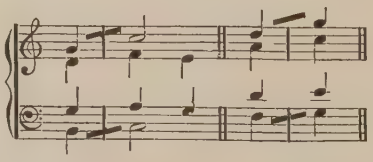
75. Rule III. Hidden octaves are forbidden between the extreme parts, except, first, between primary chords in *root-position*—(*i.e.*, with the roots in the bass), when the bass must rise a fourth or fall a fifth, and *the upper part must move by step*:

Ex. 43.



Second, when the second of the two chords is a second inversion (§ 172.), the bass note being either the tonic or dominant of the key,—

Ex. 44.



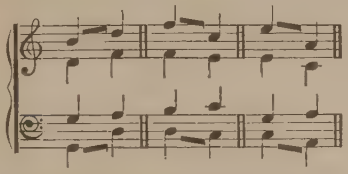
and third, when the second chord is another position of the first.

Ex. 45.

In other cases they are not allowed. Let the student examine

the three bad examples of hidden octaves here given,

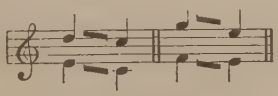
Ex. 46.



and he will see that they do not come under any of the exceptions just mentioned.*

76. Hidden octaves are, however, allowed between any other of the parts than the two extreme parts, with one important exception. It is strictly forbidden to move from a seventh or ninth, to an octave by similar motion *between* ANY *two parts*, when one part moves a second, and the other a third.

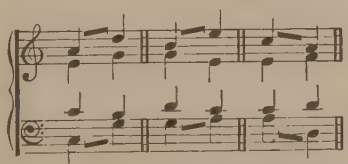
Ex. 47.



This is the very worst kind of hidden octaves, and must be most carefully avoided.

77. RULE IV. Hidden fifths are forbidden between extreme parts.

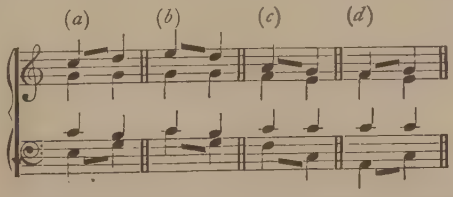
Ex. 48.



except first, in a progression between *primary* chords (tonic to dominant, or subdominant to tonic), with the upper part, as with hidden octaves, moving by step. The first of the two chords is not (as in the case of octaves) restricted to root-position; at (*a*) and (*d*) below, it is in the first inversion:

(*a*) (*b*) (*c*) (*d*)

Ex. 49.

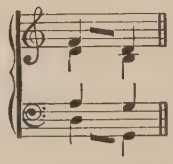


second, from the root-position of the chord of the supertonic, with the third in the upper part, to the chord of the dominant,

* The roots are not marked in Exs. 44–46, because some of the chords are inversions, the method of marking which has not yet been explained.

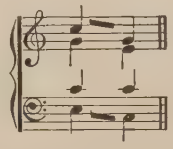
when the bass falls a fifth, and the upper part falls a third,

Ex. 50.



and third, from one to another position of the same chord, exactly as with hidden octaves:

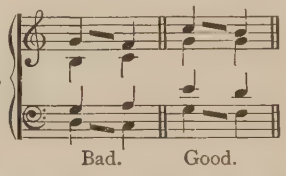
Ex. 51.



Except between extreme parts, hidden fifths are not prohibited.

78. RULE V. Consecutive fourths between the bass and an upper part are forbidden, except when the second of the two is a part of a fundamental discord (§ 232), or a passing note—*i.e.*, a note not belonging to the harmony (Chap. X.)

Ex. 52.



Bad. Good.

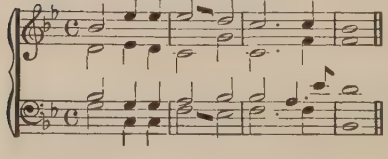
Between any of the upper parts consecutive fourths are not prohibited. They are sometimes to be found between the bass and a middle part; but even these are not advisable.

79. RULE VI. Consecutive seconds, sevenths, and ninths are forbidden between *any* two parts, unless one of the notes be a passing note. Even then it will be better for the student to avoid them.

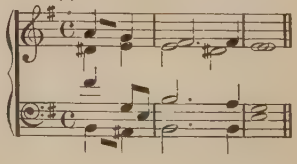
80. There is one somewhat important exception to this rule to be found in the works of the old masters. Corelli, Handel, and others sometimes followed a dominant seventh (§ 232) by another seventh on the bass note next below. We give two examples from Handel's works.

Ex. 53.

(*a*) HANDEL. Belshazzar.



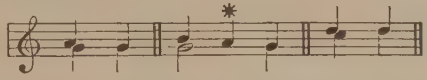
(*b*) HANDEL. Joshua.



In the second of these examples is also seen, in the tenor, an exception to the rule given in § 61. These passages are not given for the student's imitation, but because if no mention were made of such exceptions he might naturally infer, if he met with similar passages in the works of the great masters, that the rule here given was wrong. We have already said that hardly any of the rules in this chapter are *strictly* adhered to by great composers; but they are none the less useful, and even necessary for beginners.

81. Rule VII. It is forbidden for two parts to go from a second into a unison.

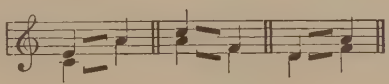
Ex. 54.



This progression is sometimes used when the second is a passing note as at (✱); but the student is advised to avoid it even in this case.

82. Rule VIII. It is generally bad to approach or leave a unison by similar motion.

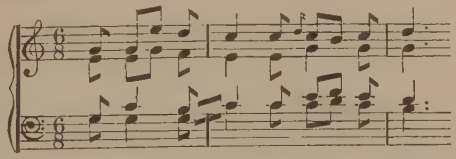
Ex. 55.



This rule should be carefully observed by beginners; but it should be added that in the works of the great masters instances of its violation are sometimes to be found. We give a few examples by Mendelssohn, whose part-writing is remarkable for purity and correctness.

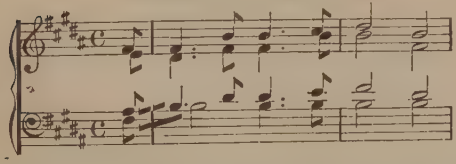
Mendelssohn. Part-Song, "Auf dem See." Op. 41, No. 6.

Ex. 56.



Mendelssohn. Jagdlied. Op. 59, No. 6.

Ex. 57.

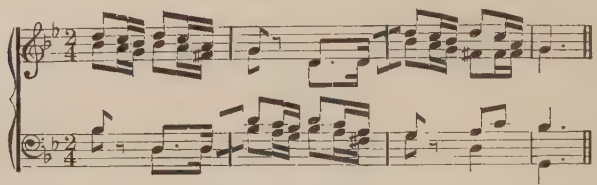


In both these passages the unison is between the tenor and bass, and the progression is from the dominant to the tonic chord. This is the case in which it is most frequently met with.

83. We now give one example of the unison quitted by similar motion.

MENDELSSOHN. Hirtenlied, Op. 88, No. 3.

Ex. 58.

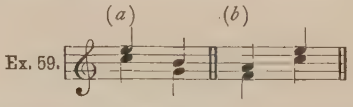


In the first and second bars of this example will be seen consecutive unisons (§ 67). Their excuse here is found in the fact that they occur between the last note of one phrase and the first of the following; had both formed part of the same phrase, they would have been objectionable.

84. Though the three passages last quoted show that similar motion to or from a unison is not absolutely prohibited, it will be advisable for beginners to abstain from its employment till they have learned by experience when it can be used effectively. There are many things done by composers which it would be unwise for the student in the earlier stages of his work to imitate. He will best and most easily acquire the power of correct and fluent part-writing by submitting himself in the first instance to a course of strict discipline.

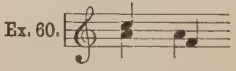
85. It is not desirable to allow two parts to overlap, that is, to let a higher part proceed to a note below that previously sounded in a lower part, or, conversely, to let a lower part proceed to a note above that previously sounded in a higher part.

Ex. 59.



At (*a*) the upper part leaps from E to B, a lower note than C, taken in the first chord by the lower part. At (*b*) the lower part leaps to C, which is higher than the A of the upper part in the first chord. Such progressions are sometimes necessary, but it is better to avoid them if possible. The crossing of two parts

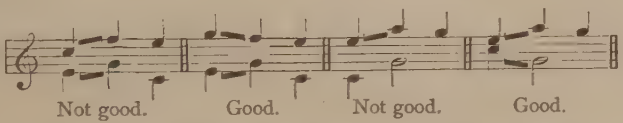
Ex. 60.



though by no means infrequent in actual composition, especially in older music, should be avoided altogether by the student, in four-part harmony, for the reasons given in the last paragraph. When, later, he has to write for a large number of parts, he will find that crossing is sometimes expedient, and even necessary.

86. When two notes making a dissonance with one another (such as a second, seventh, or ninth) are taken without preparation—that is, if neither of them has been sounded in the same voice in the preceding chord—it is better that they should enter by contrary than by similar motion, especially in the extreme parts.

Ex. 61.



87. The student must not allow himself to be discouraged by supposing that it is needful for him to commit to memory the whole of the rules given in this chapter, before he can make further progress. This is not the case. The rules are all tabulated here for future use, that they may be referred to when required. Some of them—for example, that given in § 86—will not be wanted at all at first. If the beginner will proceed steadily, one step at a time, making sure that he thoroughly grasps each point before he goes on to the next one, he will soon find that he is making satisfactory progress. All the chief difficulties of the study of harmony lie in the earlier stages; and the student who thoroughly masters the first eight chapters of the present volume may rest assured that, when he can honestly feel that he has done this, the worst of his troubles are past.

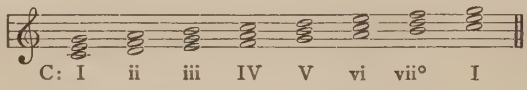
CHAPTER IV.

THE DIATONIC TRIADS OF THE MAJOR KEY.

88. It was said in Chapter II (§ 36) that a Chord was a combination of not fewer than three notes placed one above another, each note being at the distance of a third, either major or minor, above the note next below it. A Common Chord was defined as consisting of three notes, the highest of which was a perfect fifth above the root. A chord containing only three notes is called a TRIAD. Every common chord is therefore a triad, but we shall see presently that every triad is not necessarily a common chord.

89. In Ex. 4 (Chap. I) we gave the scale of C major, and in Ex. 20 (§ 39) we put a diatonic triad above each of the primary notes of that key, and saw that each of these triads was a major common chord. We will now take each note of the scale as the root (§ 36) of a triad, using only diatonic notes; it will be seen that no other notes of the key than the three primary notes will have major common chords above them.

Ex. 62.



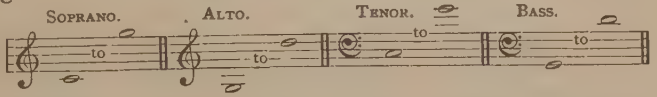
90. In the above example the triads on the second, third, sixth, and seventh degrees all contain a minor third above the root, which is therefore indicated by a small (not by a capital,) Roman numeral (§ 41). Each degree of the scale except the leading note has a perfect fifth, and therefore a common chord, above it. But the fifth above the leading note is a diminished fifth, and a chord containing a minor third and a diminished fifth above its root is called a DIMINISHED TRIAD. When in marking the roots nothing is added to the Roman numerals, whether capital or small (I. ii. etc.), a perfect fifth is always implied, and the chord will be a common chord; if the fifth be diminished, a small ° is added after the numeral. The triad on the leading note is therefore marked vii°, as above. All triads on other than the three primary notes of the key are called "secondary triads." In the present chapter we shall deal only with the treatment of primary triads.

91. It was said in the last chapter (§ 65) that most music is written in four-part harmony. We shall therefore in future give our examples in four parts. But to write a common chord, or a triad, containing only three notes, in four parts it will evi-

dently be necessary to *double* one of the notes, that is to put the same note in two of the parts, either in unison, or at the distance of an octave, or even two or three octaves. It must be remembered that this doubling of a note does not alter the nature of the chord. Though the word "triad" literally means a combination of three notes, a triad does not cease to be such, in however many parts the harmony may be, unless some *additional note*, and not a mere doubling of notes already present, be introduced into the chord. We shall see presently which are the best notes to double.

92. In writing four-part harmony, the four "voice-parts," soprano, alto, tenor, and bass (§ 65), are kept best as far as possible within the compass of the voices after which they are named. The general compass of each voice is about the following:

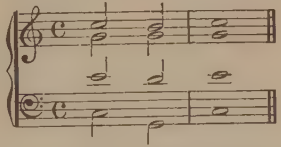
Ex. 63.



These limits should be very rarely, if ever, exceeded; and even within them it is best to keep near the middle of the compass, and not to use more of the extreme notes, either high or low, than are absolutely needful for a good progression of the parts.

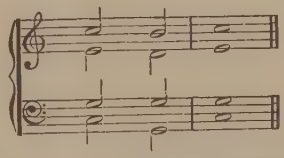
93. If in four-part harmony the three upper parts lie close together, and at a distance from the bass—in other words, if the soprano and tenor are within an octave of one another,

Ex. 64.



the harmony is said to be in *close position.* If the parts lie at more equal distances, and the tenor is more than an octave from the treble,

Ex. 65.

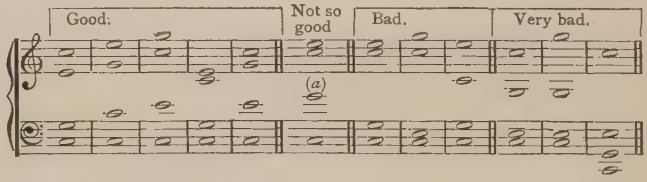


the harmony is said to be in *extended position.* In most compositions a mixture of both positions will be found. If the treble part lies low, close position will most likely be needful, to prevent the tenor part from going below its compass; but if the treble is high, extended position will generally be advisable.

94. The best position of harmony is mostly that which allows the parts to lie at approximately equal distances, when this is possible. At Ex. 64 in the last paragraph, in the first chord there is a tenth between bass and tenor, a third between tenor and alto, and a fourth between alto and soprano. This position is quite correct; but the position of the same chord at Ex. 65 is generally preferable; for here there is a fifth between bass and tenor, a sixth between tenor and alto, and a sixth between alto and soprano. The intervals between the voices are much more equal.

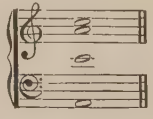
95. It will sometimes happen that it is impossible to keep the voices at approximately equal distances without breaking some rule. If there must be a large interval between two voices, it should, with very rare exceptions, be between the two lowest, the tenor and the bass. Excepting occasionally for a single chord, there should never be a larger interval than an octave between soprano and alto, or alto and tenor. We give examples of good and bad positions of the chord of C major; the student can easily find out from what has been said why each is good or bad.

Ex. 66.



It should be mentioned that the reason why the position of the chord at (*a*) is marked "not so good" is not, as the student may perhaps suppose, because of the interval of the twelfth between the tenor and bass, but only because both alto and tenor are lying so high. Had the bass been lower, the same relative position would have been quite good: *e.g.*

Ex. 67.



96. It will be seen that in the examples just given, the relative positions of the chords vary widely; sometimes the root, at other times the third or fifth is at the top. It must be clearly understood that the relative positions of the upper notes of a chord make no difference to its nature, *provided the same note of the chord is in the bass.* Here the root is in the bass in each instance, and the chord is said to be "in its root position." But if the third or fifth of the chord were in the bass, we should

have inversions of the chord. These will be explained in Chapter VI.

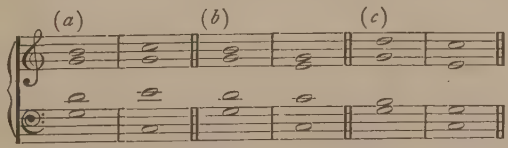
97. With one exception, to be mentioned directly, it is possible to double any of the notes of a triad; but they are by no means all equally good to double. In the majority of cases, it is better to double a primary than a secondary note of a key. If the student refer to Ex. 62, he will see that each triad contains at least one of the primary notes, and that the chords I and IV contain two. It must not be understood that it is *compulsory* to double the primary note; we sometimes find progressions in which it is quite as good, or even better, to double one of the other notes; but for general purposes it will be found a good working rule, especially for beginners, *Double a primary, rather than a secondary note.*

98. It has just been seen that the chords I and IV contain each two primary notes; and the question will naturally suggest itself, Which of the two should be doubled? The answer is that this depends upon the position of the chord. If the chord is in root position, and we double the fifth, it will sometimes be difficult, either in approaching or in quitting the chord, to avoid consecutive fifths (§ 71). The root is therefore almost always the better of the two notes to double, and our second rule for doubling is, *In the root position of a chord, it is seldom good to double the fifth.* We shall see later that this rule does not apply to inversions (§ 166).

99. It will be noticed that in the chord vii° the fifth is the only primary note. Here, however, it cannot be doubled in root position because the fifth of this chord is not a perfect, but a diminished fifth and we shall learn later that it is not generally good to double a dissonant note. Besides this, a diminished triad is very seldom found in root position, except in a sequence (§ 138).

100. The exception referred to above (§ 97) in speaking of the doubling of a note was that of the leading note. This note is the third of the dominant chord, and is a semitone below the tonic, toward which it has the strong upward tendency which gives it its name. If the dominant chord be followed by the tonic chord, the leading note, especially if in the upper part, must rise.

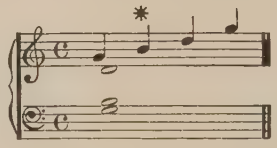
Ex. 68.



Let the student play the chords marked (*a*) and (*b*). He will

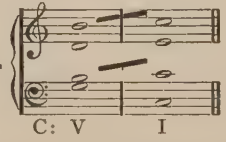
feel that the progression (*a*) satisfies the ear, while (*b*) does not do so. The effect of the leading note falling is less unsatisfactory when it is in a middle voice, as at (*c*); but this progression, though frequently used by Bach, is not to be recommended to beginners. Excepting in the repetition of a *sequence* (§ 138) or as one of the *middle* notes of the dominant chord when taken in *arpeggio*, that is in succession while the harmony remains the same,

Ex. 69.



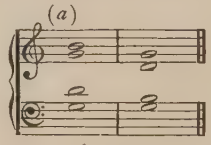
the leading note must never be doubled; and when the dominant chord is followed by the tonic chord, the note must always rise a semitone. It is evident that if the leading note is in two voices, and both rise a semitone, consecutive octaves (§ 67) will result.

Ex. 70.

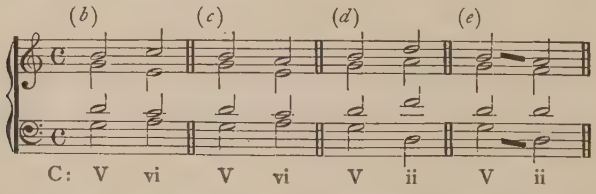


101. The leading note is, however, free to fall when the dominant chord merely changes its position,

Ex. 71.

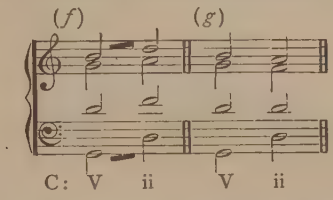


or when it is followed by some other chord than the tonic, in which case the leading note may either rise or fall.

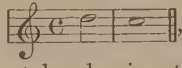


At (*b*) (*c*) the dominant chord is followed by the chord of the submediant, and the leading note may either rise to the third or fall to the root of the next chord, the former being preferable because the third is a primary note, and therefore better to double (§ 97). At (*d*) (*e*) the dominant chord is followed by

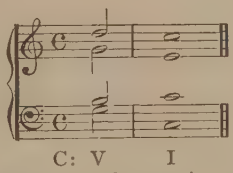
the supertonic; and either progression is *possible*, though (*d*) is much better, not only because contrary motion is mostly to be preferred to similar, but also because at (*e*) we have objectionable hidden fifths (§ 77) between the extreme parts. But if the bass *rose* from the dominant to the supertonic, as at (*f*) (*g*),



it would be best for the leading note to fall, as at (*g*); for if it rises, as at (*f*) we shall get bad "hidden octaves" (§ 75) between extreme parts.

102. One note of a triad is sometimes omitted. This is mostly the fifth of the chord—very rarely the third, because the latter note shows whether the chord is major or minor. But it not infrequently becomes necessary to omit the fifth, in order to secure a correct progression of the parts. For example, if we are harmonizing a melody in the key of C, which ends with the descent from supertonic to tonic  , the two last chords as we shall see presently, must be dominant and tonic in their root positions. The only correct way of harmonizing these chords will be—

Ex. 72.



Here the melody descends to the tonic; the bass also goes to the tonic; and the leading note must rise to the tonic (§ 100); there is therefore only one part, the alto, remaining; and as the third is needed to fix the nature of the chord, this note is taken, and the fifth omitted.* Occasionally also, though much more rarely than the fifth, the root of the chord is the note omitted in inversions.

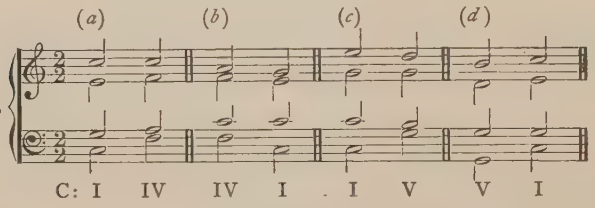
103. The student will now be able to begin to write simple exercises on the primary triads of the key in their root positions. In order that he may be able to do this correctly, and to make

* In old music, especially at the close of a piece in a minor key, the third is occasionally omitted, as at the end of the "Kyrie" in Mozart's "Requiem"; but this is exceptional, as we shall see when treating of the minor key.

his parts move smoothly, there are three simple rules which it will be necessary for him to observe. They are the following:

104. Rule I. *If the same note is found in two consecutive chords, it should in general be kept in the same voice.* If we refer to the primary triads of C major, given in Ex. 20 (§ 39), we shall see that there are only two notes of the scale—the tonic and the dominant—which are found in more than one chord, the former being a part of I and IV, and the latter of I and V. It will therefore be best at first to keep these notes in the same voice whenever these chords occur in succession.

Ex. 73.



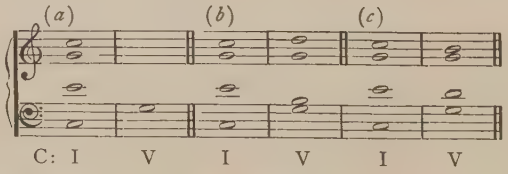
At (*a*) the note C is repeated in the treble, and at (*b*) in the tenor; at (*c*) G is repeated in the alto, and at (*d*) in the tenor. Let the student notice the hidden fifths between extreme parts at (*b*) and the hidden octaves at (*d*). By referring to §§ 75, 77, he will see that both are among those that are allowed.

105. It must be clearly understood that the rule just given is not one of such stringency or universal application as those prohibiting consecutive octaves, etc. We frequently meet with cases—we have already seen one in Ex. 71 (*e*) of § 101—in which it is much better not to keep the note in the same voice; and we shall find others in our next chapter. But in the exercises now to be written it will be well to observe it strictly, as it will conduce greatly to the smoothness of the part-writing.

106. Rule II. *Each part should generally go to its nearest note in the following chord.* This is shown in Ex. 73, where all the upper parts, when not stationary, are moving by step.

107. It frequently happens that one of the voices has two equally near notes in the following chord. For example, in the progression from I to V,—

Ex. 74.

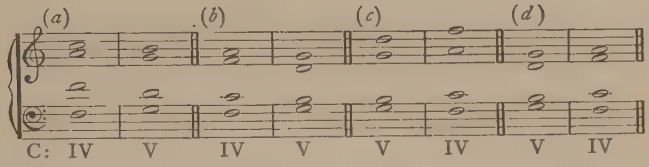


if the tonic chord is in the position shown at (*a*), the treble can go equally well to D and to B. But if it goes to D, as at

(*b*), the tenor will have to take B, which is not the nearest note of the chord to E. The treble should therefore take B, which allows the tenor also to move to its nearest note, D. In such cases, which are of constant occurrence, the student should always look at the other parts of the harmony before deciding which of the two notes to select.

108. Rule III. *When the bass moves by step, upwards or downwards, fifths and octaves must move* in contrary motion to it.

Ex. 75.



At (*a*) (*b*) the bass moves upwards, and the other voices downwards; at (*c*) (*d*) the bass falls and the other parts rise. Observe also that, although nothing is said about the third of the chord in the rule, all the thirds also are here moving in contrary motion to the bass. If they rose at (*a*) (*b*) there would be a doubled leading note (§ 100); if they fell at (*c*) (*d*) we should double a secondary note, and the chord would have no fifth. The third may, however, sometimes move in similar motion to the bass, as at (*b*) in Ex. 71, where the doubled note in the second chord is the tonic, the chief of the primary notes.

109. The rule last given is the most important of the three, and it is one the non-observance of which brings the beginner into a great deal of trouble. But it is very easy for him to avoid mistakes in this matter. If we look at all the progressions in Ex. 75, and also at that in Ex. 71 (*b*) just referred to, we shall see that there are *no notes common to both the chords*. Now let the student refer to the series of triads in the key of C given in Ex. 62, and he will find that, while no two chords whose roots are on adjacent degrees of the scale ever have notes in common, two chords the roots of which are *more* than a second apart always have at least one, and if the roots are a third apart, two notes in common. If, therefore, on trying to apply Rule I (§ 104), the student finds that there is no note in the chord he is going to write which was in the last, he may at once be sure that the bass is moving by step, and that, so to speak, the danger signal is hoisted. All that is then necessary is, to remember to make the fifth and octave (sometimes also the third), of the *first* of the two chords move in contrary motion to the bass.

110. There are two methods of writing four-part harmony, which are called respectively "short score" and "open score."

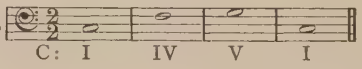
In short score the music is written on two staves—the treble and alto on the upper staff, with the G clef, and the tenor and bass on the lower one, with the F clef. All our four-part examples in this chapter are written in this way; and it must be remembered that the stems of the higher part on each staff (the treble and tenor), must always be turned *upwards*, and the stems of the lower voices (alto and bass) *downwards*. If two parts written on the same staff are in unison, this is shown by putting two stems to the note, one up and the other down (𝅗𝅥 𝅗𝅥) or, in the case of a semibreve, which has no stem, by putting two notes side by side (𝅝𝅝).

111. In "open score" each voice is written on a separate staff, the alto and tenor, sometimes also the soprano, being written each with its proper C clef. From considerations of space, all the examples in this volume will be given in short score; but the student who is familiar with the C clefs—and if he is not, the sooner he learns them, the better for him—is advised to use open score, not only because of the clearness with which it shows the progression of each voice, but because the power of being able to read from score is most useful to the young musician.

112. Before we proceed further, it should be said that the three primary triads *absolutely define the key*. In the key of C, the tonic is defined by the notes F and B, for every other tonic has either F♯ or B♭ in its scale; while the mode (major or minor), is fixed by the third of the tonic chord. There is no other major key but C which contains all the three notes, E, F, and B naturals. The same three notes are also found in A minor; but this causes no confusion, because (as will be seen later), a minor key always has an accidental (♯ or ♮), before its leading note.

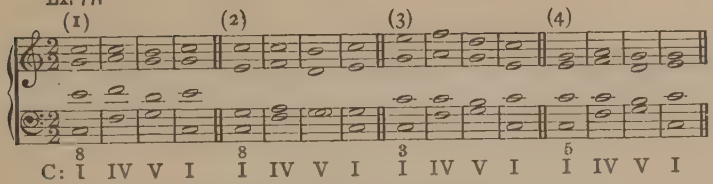
113. We will now show how to connect the primary triads of a key with one another. We will take the simplest possible succession of them:

Ex. 76.



Observe that this simple passage begins and ends with the tonic chord. The former is usual, the latter *necessary* (§ 38). There will be no difficulty in putting the correct harmonies above this bass, if the student will bear in mind the three rules given in §§ 104, 106, 108. The position of the first chord is optional; either the root, third, or fifth may be placed in the treble. We will work it in all these positions.

Ex. 77.

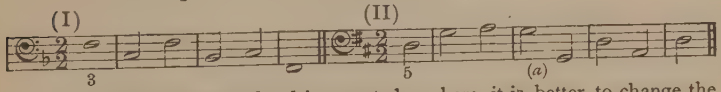


At (1) the root is at the top, and the harmony is in close position. The treble f (2) is the same as of (1), but extended position is here used. At (3) the third is in the treble, and at (4), the fifth. In each case the *root* of every chord (a primary note), is doubled.

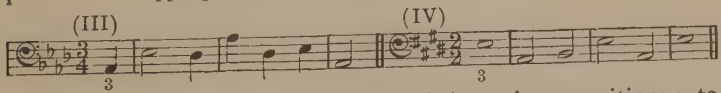
114. It must be noticed that in this example if we begin with the root in the treble the harmony can be written equally well in either position; but if we wrote (3) in close position, the tenor would lie too high, while in (4), beginning with the fifth at the top, extended position would be impossible, as the tenor would go below the bass in the third chord. In considering the position of his first chord, the student should always look ahead, and think of the following harmonies. It should also be noticed that in the last bar of (3) we have not kept the G of the preceding chord in the alto, although it is a note of the following chord. This is because it is, with rare exceptions, best to finish an exercise with the tonic in the upper voice. It would have been perfectly *correct* to have kept G in the alto, and let the treble end on E; but the close we have given is preferable, and we therefore finish the exercise in the way explained in § 102.

115. The student can now work the exercises given below, writing either in open or short score. If he select the latter, he must remember, in copying his bass, to turn all the stems downwards (§ 110). He should leave a blank staff under each exercise, on which to mark the key and the roots, as explained in § 41, and as we have done in Ex. 77.

Add three parts to the following basses:



(*a*) When the same chord is repeated, as here, it is better to change the position of the upper parts on repetition.



These exercises can all be worked in various positions; to assist the student, we mark in these, and in all future exercises

with a given bass, the *best* position of the first chord. The figure (8, 5, or 3), placed under the first bass note, indicates that the octave, fifth, or third of the first chord is to be placed in the *treble* voice.

116. Our next step will be harmonization of simple melodies, using only the three primary triads. This will at first be found somewhat more difficult than the exercises just worked, because the student will have to choose his own chords, instead of having them prescribed for him. It will be of great assistance to him if he can hear clearly in his mind the effect of what he is writing; with such simple harmonies as these now to be used, this is by no means difficult. Too many pupils write their harmony exercises just as if they were sums, and with no more idea of their sound than a fly would have, that alighted on their music paper. Let it be emphatically stated that no really satisfactory progress can ever be made unless the notes convey to their writer a distinct impression of their effect.

117. Every piece of music, however short, must end with a Cadence, or close. There are various kinds of cadence; the only one which it is needful for the student to know at present is that called the *Full Cadence*. It has been already said more than once that the final chord of a piece must be the tonic chord; to produce a satisfactory effect, the chord must be in root position. To make a full cadence, the tonic chord must be preceded by the root position of one of the other primary triads, IV and V. This gives two kinds of full cadence: V–I, called the *Authentic*, and IV–I, known as the *Plagal* cadence.* In older music the latter was the more common; in modern music the authentic cadence is much the more frequently used.

118. The last chord of a cadence should come upon an accented beat of a bar. There are occasional exceptions to this rule, in the case of what are known as "feminine endings" (See *Musical Form*, Chapter II); but with these the student need not at present trouble himself. If he will look at the four exercises he has just worked, he will see that each ends on an accented note, and that the first three finish with an authentic, and the fourth with a plagal cadence.

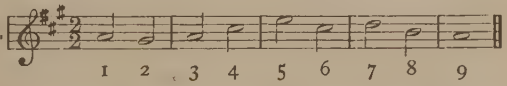
119. In harmonizing melodies with only the three primary triads, the student's work will be considerably simplified by the fact that there are only two notes in the key—the tonic and the dominant—which can belong to more than one chord. Which of the two chords should be used, will chiefly depend upon the context. In these first simple harmonizations, it is best to avoid a stationary bass; if therefore in the key of C, the note C were preceded or followed by E, it would mostly be better to treat

* These terms will be explained in Appendix A.

the C as the fifth of IV; but if the next note were A, which must be a note of IV, it would be preferable to harmonize C with the tonic chord. If the same note be repeated in the melody, it would certainly be best to change the chord, or, if there be only one chord possible for that note, to change the position of some of the parts. Large leaps should, however, be avoided as much as possible, excepting the leap of an octave in the bass, and the last two chords of each exercise should make a full cadence, either authentic or plagal. In the case of the latter, it is not necessary that the tonic should be in the upper part of the last chord.

120. We will now write a simple melody, and harmonize it, as a pattern for the student. Hitherto we have written all our examples in the key of C. But there is no special virtue in this key, and there is not the least difference in the difficulty of writing harmony between any one key and any other. In order, therefore, that the student may not accustom himself to think exclusively in the key of C, we will write the present exercise in A major.

Ex. 78.

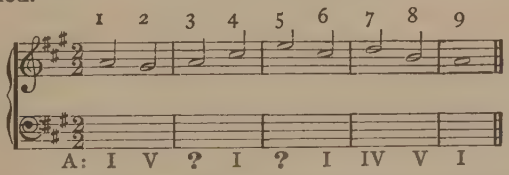


We have numbered each note for convenience of reference.

121. If we examine this melody, we shall see that there are only four notes (Nos. 1, 3, 5, and 9), which admit of more than one possible chord; and of these, the last must take the tonic chord (§ 117). The first chord must also be the tonic; for an exercise should never begin with a subdominant chord. When it does not begin with the tonic, it will begin with a dominant chord—almost always on an *unaccented* beat. We have here, therefore, only two notes (3 and 5), which allow any choice.

122. Our next step will be to write out our melody, leaving room for the lower parts that we are going to add to it, and marking under the bass the roots of all the chords which are already fixed.

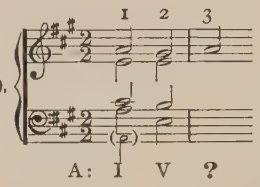
Ex. 79.



Our first and second chords must be evidently tonic and dominant. Shall we begin in close or extended position? Here the former will be better; for we shall see, as we proceed (§ 125) that extended position would get us into trouble in the

second bar. We therefore in the first chord write E in the alto, C in the tenor, and either the upper or lower A—here it matters not which—in the bass. In our next chord (V), the bass note must be E, which, as the primary note in the chord, is the best one to double; as the last note of the alto was E, we keep it in the same voice (§ 104), and put B in the tenor.

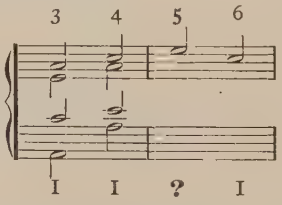
Ex. 80.



123. For our third note two chords, I and IV, are possible. But *in this position* IV would not be good. The progression V–IV always sounds more or less harsh if the third of the dominant is *in the upper voice.** The beginner would naturally be inclined to introduce all his primary triads as early as possible, to establish the key (§ 112); and in many cases it would be best to do so. But here the key is sufficiently established by its tonic and dominant chords. Had chords 1 and 2 occurred *in the middle of a piece*, the key might have been E major; but no piece should ever *begin* with the progression from subdominant to tonic. We shall therefore take I for our third chord, and write it in the same position as chord I, with the *lower* A in the bass, for a reason that will be seen directly (§ 125).

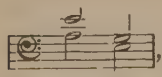
124. The fourth note, C, can only form part of the tonic chord. It is therefore best to change the position of all the parts, and to let the bass leap an octave.

Ex. 81.



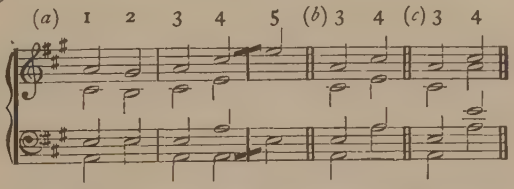
The following E can belong to either I or V. As we have already had I twice in succession, and must have it again for the sixth note, it is evidently best to take V here. The G should be placed in the alto; for if it is in the tenor, it will be too high if we take the upper G, as it will have to go to A in the next chord (§ 100), and if we take the lower G, not only

* If the student will turn back to Ex. 75 (*c*) (*d*), where the progression V–IV is given, it will be seen that in both cases the leading note is *in a middle voice.*

will there be an unpleasant overlapping (§ 85) with the bass  , but the alto and tenor will be a tenth apart (§ 95). Obviously we cannot put B in the tenor, for this would make consecutive fifths with the bass. We therefore omit the fifth (§ 102).

125. The student will now see why in the third chord we put the lower, and not the upper A in the bass. We should have had the lower A then in the fourth chord, and the progression to E, in the fifth, would have caused bad hidden octaves between extreme parts (§ 75); because, though the chords are both primary, the upper part would not be moving by step. It will also be seen why extended position at the beginning of the exercise would not have been good. After the third chord, we must either have had a stationary bass, followed by the bad hidden octaves just seen (See Ex. 85 (*a*) below), or progression to a unison (*b*), or tenor and bass both leaping an octave (*c*).

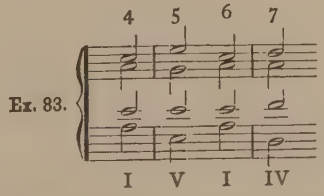
Ex. 82.



Let it be noted in passing that there are *not* consecutive fifths at (*c*), because the repetition of the same notes at an octave's distance does not change the harmony (§ 67).

126. The progressions from chords 5 to 6, and 6 to 7, should now offer no difficulty, because the roots are more than a second apart; there will therefore be notes common to the chords, and these must be kept in the same voice. The exercise from the fourth to the seventh chords should therefore be written:

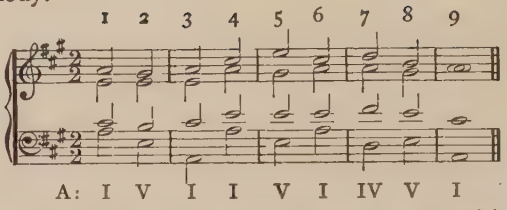
Ex. 83.



From 7 to 8 the bass moves by step. The way of treating the upper parts has been explained in § 108. From 8 to 9 the melody descends from supertonic to tonic (See § 102). The student will now readily understand the harmonizing of the

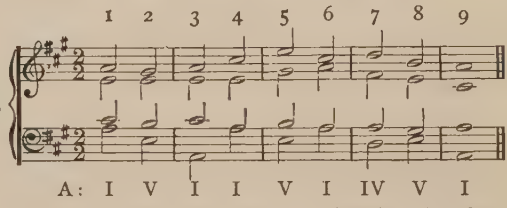
whole melody.

Ex. 84.



If it is preferred to keep the tenor lower, the position of the chords from 4 might have been changed thus:

Ex. 85.

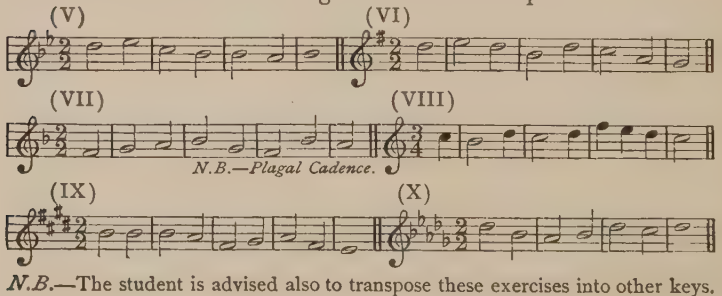


In this position we have the fifth in chord 5, but have then to omit it in chord 6.

127. It may be well to say that in actual composition no one would think of harmonizing this melody as it is done here. The result of restricting ourselves entirely to the primary triads in root position is that an effect of stiffness is produced. When, in the following chapters, the student has become acquainted with secondary triads and inversions, we will harmonize the same melody again, and it will be felt at once how much more easily and naturally the music flows. But, the primary triads being, as already said, the most important chords of the key, it is necessary to know them thoroughly, and to be familiar with their treatment, before proceeding with the remaining chords.

128. The student can now attempt the harmonizing of a few simple melodies. If he has thoroughly understood the explanations we have given in this chapter, he will not find much trouble with his work.

Harmonize the following melodies in four parts.



N.B.—The student is advised also to transpose these exercises into other keys.

CHAPTER V.

THE DIATONIC TRIADS OF THE MAJOR KEY (CONTINUED). SEQUENCES.

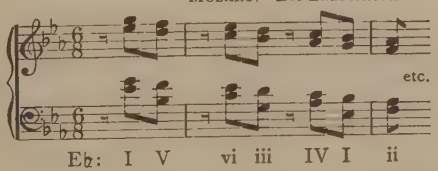
129. In our last chapter we spoke of the primary triads of the major key, and showed how they were to be treated, and how to be connected one with another. We have now to deal with the remaining triads—the so-called "secondary triads," which are found on all the degrees of the scale except the first, fourth, and fifth.

130. In Ex. 62 (§ 89) we gave a table of all the triads, and we saw that all the secondary triads had minor thirds, while one of them (vii°) has also a diminished fifth. The first thing to be considered, before making use of these triads in four-part harmony, is, which is the best note to double. Bearing in mind the rule given in § 97, that it is generally better to double a primary than a secondary note, it will be seen that in the triads ii, iii, and vi, the *third* of the chord is the only primary note. The chord vii° is so seldom met with in root position (§ 99) that we shall defer the discussion of which of its notes to double till we come, in the next chapter, to treat of the inversions of chords.

131. The employment of the primary chords, as the most important in the key, gives great strength to the harmonic progressions; they may be termed the "strong" chords of the key. As compared with them, the secondary triads produce an effect of weakness. It is therefore generally advisable not to introduce too many secondary chords in succession; when judiciously intermixed with primary chords, however, they remove the impression of stiffness which, as we have seen (§ 127), results from the sole employment of the latter in root position. To illustrate this, we give a short passage by Mozart.

Mozart. Die Zauberflöte.

Ex. 86.



132. This short passage is full of instructiveness for the student, and should be carefully examined. Let it be first noticed that within the space of two bars we find all the diatonic common chords of the major key, in each case with the root in the bass. Next let it be observed that the tenor doubles the

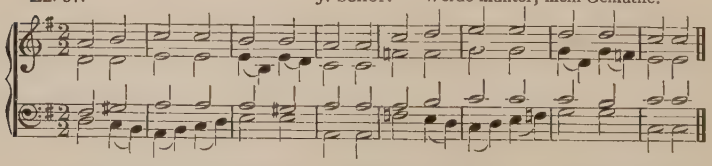
soprano in the octave through the whole passage. This illustrates what was said in Chapter III (§ 70). The law against consecutive octaves is not broken by such a progression as this, though it would be if only two or three notes of the tenor, instead of all, moved in octaves with the soprano. Though there are four parts moving here, the passage is not in four-part harmony, but *in three-part harmony with one part doubled.* It will be seen further that in every alternate chord the fifth is omitted. This is because the second and third pairs of chords are exact copies of the first pair, but on different parts of the scale.

133. Such a passage as this is called a Sequence. A Sequence may be defined as a progression of chords, repeated on other degrees of the scale, when each part proceeds in exactly the same way on each repetition as in the original pattern. In Ex. 86 it will be seen that the third and fourth chords are the same as the first and second, as regards their position and the notes they contain, but they are *a third lower.* The fifth and sixth chords are a third lower than the third and fourth, which in other respects they also resemble.

134. It must be noticed that while the third and fourth chords are in all other respects exact repetitions of the first and second, they differ in the quality of the intervals; the first two chords are both *major,* the second pair are both *minor,* and the third pair are *major* again. The reason of this is, that the music remains in the same key throughout. This is by far the most usual kind of sequence, and is called a *tonal* sequence. We shall see directly that it is possible for a sequence to modulate.

135. There is no limitation as to the number of chords of which the pattern of a sequence may consist. In most cases there will be two, three, or four; occasionally, however, longer sequences are met with, as in the following passage from an old German choral:

Ex. 87. J. Schop. "Werde munter, mein Gemüthe."

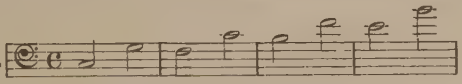


Here the pattern is an entire phrase, four bars long; the imitation is a third higher, and is an example of a *modulating* sequence, the pattern being in A minor, and the imitation in C major. With such a long pattern as this, we seldom find more than one imitation; if the pattern consist of only a few notes,

three, four, or even more imitations are to be met with.

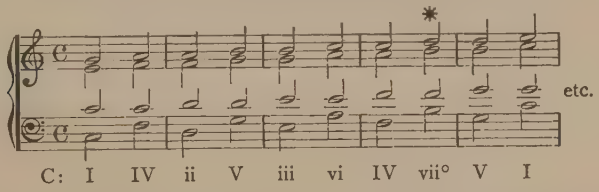
136. The pattern set for a sequence may be imitated at any interval above or below. Practically, however, the limit of a third is seldom if ever exceeded, as many imitations at a larger interval would soon carry us beyond the range of the voices, *e.g.*,

Ex. 88.



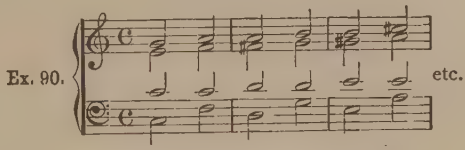
137. We now give a simple sequence, on a pattern of two notes, to illustrate a point not yet touched upon:

Ex. 89.



Here we have a tonal sequence (§ 134), in which a pattern of two notes is repeated a second higher each time. Note that it is necessary that the distance of each repetition should be uniform; if the second bar here were omitted, and the first repetition were a third higher, while the following ones rose only a second, we should have an "irregular" sequence. Observe also that it would have been possible to keep the *quality* of the intervals the same in the repetitions as in the pattern:

Ex. 90.

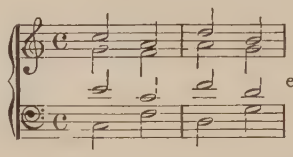


Such a sequence would be called a *real* sequence; but it will be seen that each repetition would be in a different key.

138. At the fourth bar of the sequence given in Ex. 89, the second chord, marked with (*), requires special notice. It will be seen that we have here the diminished triad in its root position (§ 99). It will also be noticed that the leading note is doubled (§ 100), and that between the two notes of the bass in this bar is seen the unmelodic interval of the augmented fourth (§ 60). These departures from the rules already given are only justified by the fact that they occur in *one of the repetitions* of a sequence. Had the fourth bar of the example been given as a *pattern* it would have been faulty, and the doubled leading note

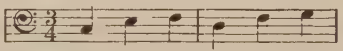
would not have been allowed.*

139. The sequence we are examining might have been arranged differently. We might, for instance, have put the first chord in a different position, still retaining the second as we have given it:

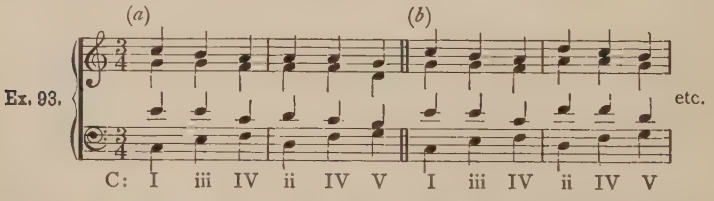
Ex. 91.  etc.

We preferred to give at first a position which allowed strict observance of the rules given in Chapter IV, at §§ 104, 106. But the effect of the sequence will be better if carried out after the pattern last indicated; not only because as a general rule contrary motion is preferable to similar, but also because we thus obtain a less monotonous melody.

140. It will in many sequences be found impossible to attend to the rules just referred to. For example, suppose we work a sequence on this pattern,

Ex. 92.  etc.

if in the second bar we attempt to keep the two notes F and A of the chord of D in the same voices in which they were in the preceding chord, as at (*a*) below, it is clear that the second bar will not correspond to the pattern set by the first, and there will be no *sequence*. It will therefore be necessary to arrange the upper parts as at (*b*).

Ex. 93. 

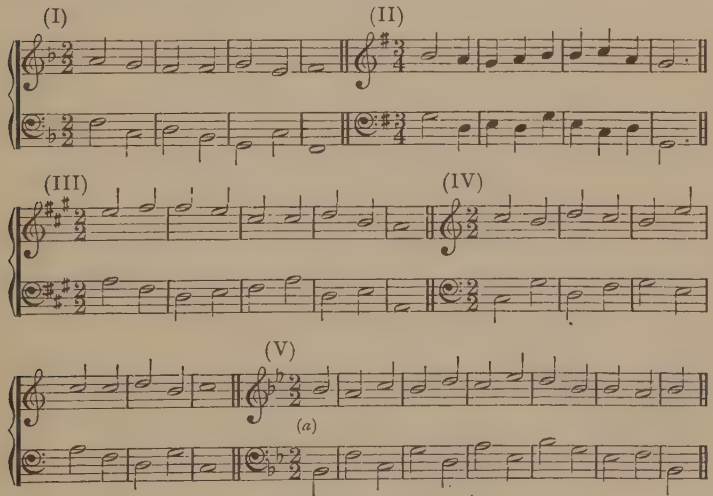
141. The student may now attempt exercises containing all the diatonic triads. He should refresh his memory by referring to the three rules given in the last chapter (§§ 104, 106, 108), remembering, however, that the first and second of these rules may be disregarded in a sequence, or if their observance would

* It would have been possible in this passage to have had B♭ instead of B♮ in the fourth bar, making a transition for a moment into the key of F. The progression would then have been analogous to the well-known sequence in Handel's chorus, "The horse and his rider," in "Israel in Egypt," quoted in Macfarren's "Six Lectures on Harmony," p. 60.

produce objectionable hidden octaves or fifths (§§ 75 to 77), as in (*e*) (*f*) of Ex. 71 (§ 101). It is also allowable to transfer a note from one part of the harmony to another, if a better melody can be obtained thereby. An instance will be seen in the first and second bars of Exercise IV below, where the D, which will be in one of the middle parts of the second chord, is transferred to the treble in the third chord, not only to avoid hidden fifths in the outer parts, but to improve the melody of the treble. The third rule (§ 108), must be *strictly* observed. With regard to doubling, his safest plan for the present will be mostly to double a primary note, except in the repetitions of a sequence, where it is evidently impossible. In Ex. 89, for instance, the root (a primary note,) is doubled in the first chord of the pattern; it is therefore necessary to do the same in the first chord of each succeeding bar, though the roots of the chords in the second and third bars are secondary notes in the key.

142. We begin with a few exercises in which both treble and bass are given. These should not be found difficult, even by a beginner, as he has only to add alto and tenor parts. He should leave a blank staff under each exercise, and mark his keys and roots *before* beginning to fill up the chords.

Treble and bass given. Add alto and tenor.



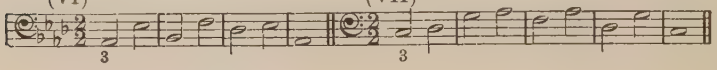
(*a*) Begin in *extended* position.

143. Our next step will be to work exercises in which only the bass is given. After what has been already said, no further directions will be necessary. It is possible to begin with any note of the first chord in the treble; we will only remind the

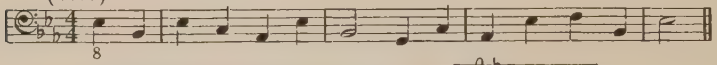
student of what we said in the last chapter (§ 115),—that the figure under the first bass note of each exercise shows the *best* position for the first chord, and indicates which note is to be placed in the treble. Finish each *with the tonic in the treble.*

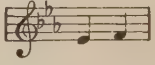
Bass only given. Add three upper parts.

(VI) (VII)

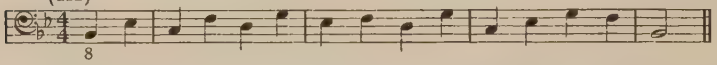


(VIII)



N. B.—In this exercise, begin the treble thus:  etc.

(IX)



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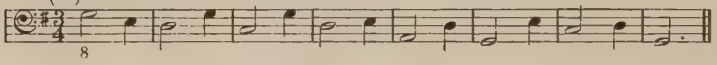

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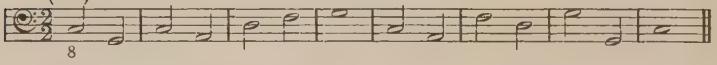

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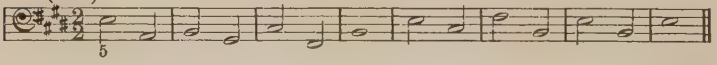

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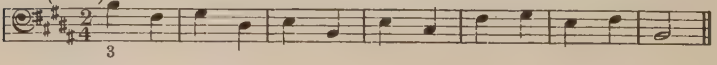
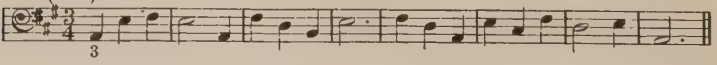
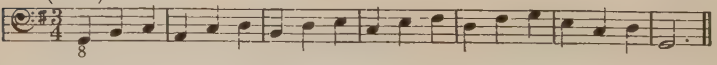


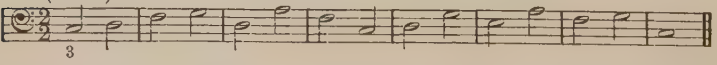
(XV)



(XVI)



(XVII)



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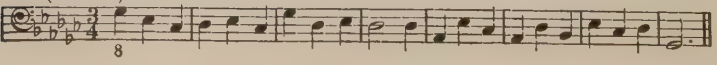
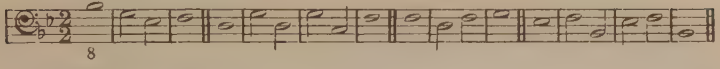
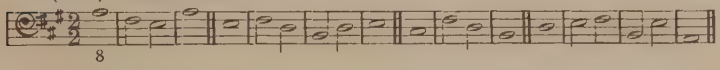


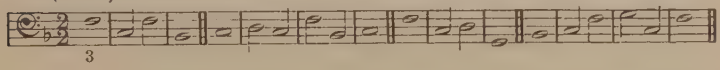
(XIX) Double Chant.



(XX) Double Chant.



(XXI) Double Chant.



144. Before proceeding to harmonize melodies, employing secondary as well as primary chords, there are some important points that the student must clearly understand. It was seen in the last chapter (§ 119,) that, when only primary chords were used, there were only two notes of the scale (the tonic and the dominant,) which could belong to more than one chord. But if we use all the triads of the key, each note will form part of three different chords, as it may be either the root, the third, or the fifth of a chord. This will be seen from the following table:

The tonic is a note of chords . . .	I, vi, IV.
The supertonic	ii, vii°, V.
The mediant	iii, I, vi.
The subdominant	IV, ii, vii°.
The dominant	V, iii, I.
The submediant	vi, IV, ii.
The leading-note	vii°, V, iii.

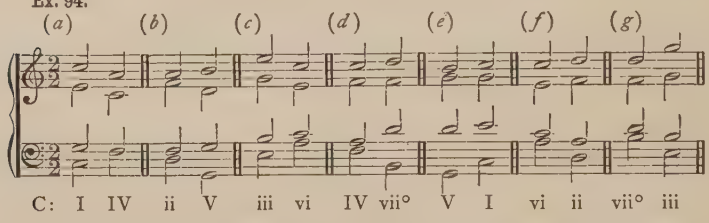
Which of these chords to select in harmonizing any particular note of a melody will largely depend upon the context; not infrequently two may be equally good. It is therefore impossible to lay down any fixed rules on the subject; but a few general principles may be given for the guidance of the student in his earlier attempts.

145. The first thing to be remembered is that, as mentioned in the last chapter, every piece must end with a Cadence (§§ 117, 118.) The two final chords must therefore be V–I, or (if the penultimate note of the melody be not a note of the dominant chord,) IV–I. The first chord should also be I, or, more rarely, and *only if the melody begins on an unaccented note*, V. But for all the intermediate notes there will be more choice; and the selection will largely depend on the progressions of the roots, on which a few words must be said.*

* This question is discussed in detail in Chapter II of *Counterpoint;* only such points are mentioned here as the student will require at his present stage.

146. A root can move upwards or downwards, either by step of a second, or by leap of a third or fourth. As the leap of a fifth downwards is the same, as regards the harmonic progression, as that of a fourth upwards, and the same thing applies to thirds and sixths, seconds and sevenths, the student will see that the six progressions just named are the only ones possible. Of these, the strongest and firmest are those in which the root rises or falls a fourth.

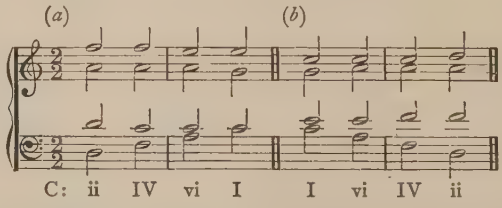
Ex. 94.



We have here given an example of every progression in which the root rises a fourth; we have several times made the bass fall a fifth, to impress upon the student the identity of the root-progression. All the above progressions are very good, except (*d*) and (*g*), which, as they contain the root-position of vii°, should only be used in one of the repetitions of a sequence (§ 99). It is evident that if we read these progressions *backwards*—*e.g.* at (*a*) taking IV–I instead of I–IV,—all the roots will fall a fourth; these progressions will be just as good as the others, excepting those which contain vii° as one of the two chords.

147. The progression of roots by leap of a third is practicable, either upwards or downwards; but the effect of the latter is generally more satisfactory than of the former, especially if two or three such leaps occur in succession;—*e.g.*:

Ex. 95.



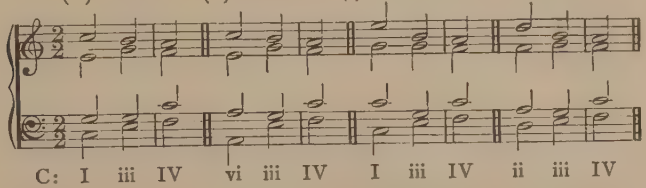
At (*a*) is a series of rising, and at (*b*) of falling thirds, the same chords being chosen in both cases. Both passages are correct, but the effect of the latter is more pleasant.

148. It is in general good for the root to rise by step of a second; but there are two of these upward step-progressions which require a little care. In the progression iii–IV the effect

is not satisfactory unless the leading-note (the fifth of iii,) is taken and left by step in a *descending* scale; *e.g.*—

(*a*) Good. (*b*) Good. (*c*) Not good. (*d*) Not good.

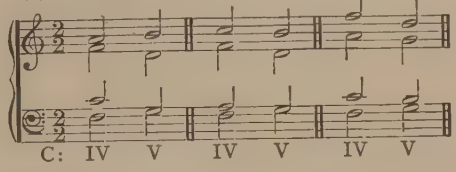
Ex. 96.

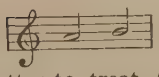


The other progression just referred to is IV–V, in which it is not good in general to place both the thirds in the treble, though it is not absolutely forbidden.

(*a*) Not very good. (*b*) Good. (*c*) Good.

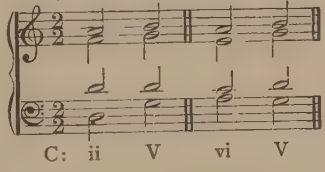
Ex. 97.



If the notes  were given in the melody, it would mostly be better to treat A as either the fifth of ii or the root of vi; *e.g.*—

(*a*) (*b*)

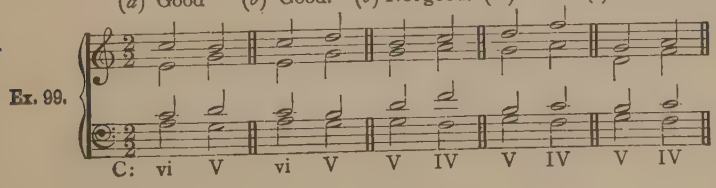
Ex. 98.



149. We shall learn later that when the root proceeds by step downwards, one or both of the chords should generally be inverted. The only good progressions *in root position*—with which alone we are now concerned—of roots falling by step are vi–V and V–IV; and in the latter, the leading-note (the third of V,) should not be in the upper part.

(*a*) Good (*b*) Good. (*c*) Not good. (*d*) Good. (*e*) Good.

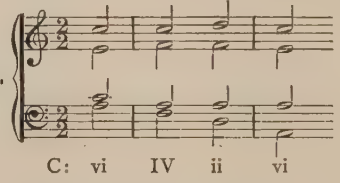
Ex. 99.



150. We shall show the application of these principles directly, by harmonizing a melody as a pattern; meanwhile one or two further hints may be usefully given. Avoid vii° altogether, except in the repetition of a sequence, and be sparing in the employment of the mediant chord (iii). Except when introduced as in Ex. 96 (*a*) (*b*), or in a sequence, it should only be taken when it can be followed by vi.

151. Remember that a key is defined by its primary chords (§ 112). As clearness of tonality is one of the first requisites of good writing, the primary chords should always be introduced early. After I and V have been employed, ii will define the key just as well as IV, since it contains the subdominant. Always use a fair proportion of primary triads in harmonizing; do not forget that too many secondary chords in succession have a weak effect, and may sometimes even disturb the feeling of the key. If, for example in C major we find the following progression,—

Ex. 100.

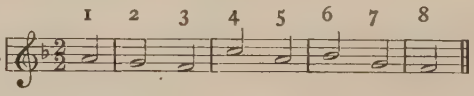


the impression produced, in spite of the primary chord IV, is more that of A minor than of C major.

152. If a note of the melody is repeated, it is better to change the chord. When we can use inversions, it will often suffice to change the position of the same chord; but, with only root positions, it will almost always be better to take a different harmony.

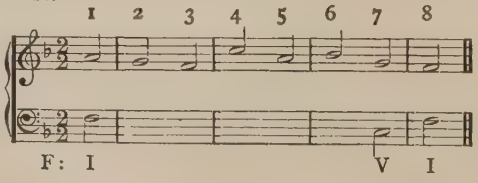
153. We will now illustrate the instructions we have given, by harmonizing a simple melody of four bars.

Ex. 101.



As in the melody worked in § 120, we number each chord for reference, and proceed to sketch our score, leaving room for marking the roots under the bass staff. We know, from § 145, what must be the first and the last two chords: we therefore mark them first.

Ex. 102.



154. In considering which chords to choose, the student may find occasional reference to the table in § 144 helpful. G, the second note of the melody, belongs to the chords ii, vii°, V; we take the last, as one of the primary chords, for the sake of defining the key. The following note, F, is a note of the chords I, vi, and IV. The last is impossible; let the student ask himself why. We therefore have a choice of I or vi; and as we had I before V, we now take vi, to get more variety. Our first three chords are therefore I, V, vi.*

155. Here let us pause for a moment, to point out that, though we have not introduced our third primary chord, (IV), and shall not be able to do so till the sixth chord—for the fourth and fifth notes are not parts of the subdominant harmony—the two chords I and V are here quite sufficient to establish the key. The only other key besides F which contains both those chords is C, in which key they would be IV and I. Though very unusual, it is not absolutely unprecedented for a piece to begin with the subdominant chord;† but in such a case it is never followed by the tonic chord. When a piece begins with a downward root-progression of a fourth, as here, the first chord will always be felt as tonic, and the second as dominant.

156. We now continue our harmonizing. Our last chord was vi. For the following C the chord can be either V, iii, or I. The last will not be good here; for the lower F will give a needlessly large leap in the bass, while the upper F will make bad hidden fifths (§ 77). We had V in the second chord; and therefore, *as it is possible to follow* iii *by* vi *in the next chord* (§ 150), we take iii for the fourth chord; of course the fifth chord must be vi.

157. The sixth note, B♭, must be part of ii or IV. Here vii° is inadmissible (§ 150), and the other two are equally good. IV gives slightly the stronger harmony; but, looking at the melody, we see that the sixth and seventh notes are a sequential repetition of the fourth and fifth, and, by taking ii in the bass, it is possible to make a sequence in all the parts. We will therefore select ii, and mark the alternative version, IV, in small notes. The last two chords we already know.

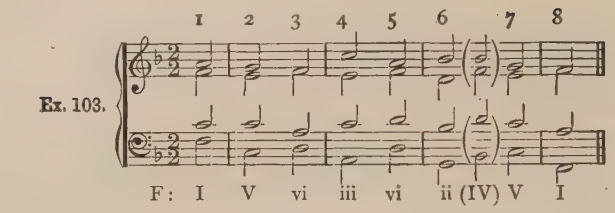
158. We now give the whole piece. It will be unnecessary, after what the student has already learned, to explain in detail

* The student is advised to mark each root in his copy of the exercise, as he proceeds.

† An example may be seen in the 'Nordisches Lied' in Schumann's 'Album für die Jugend,' Op. 68.

the way in which each chord is filled up.

Ex. 103.

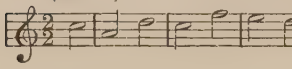


Observe here the strong harmonic progressions; except between the second and third chords, the roots always rise or fall a fourth (§ 146). Notice also that in every chord except the fifth, it is a primary note that is doubled.

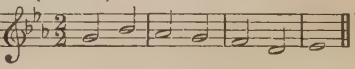
159. The student should now harmonize the following melodies. When he has done this, he may attempt the composition of little melodies of four bars for himself, taking care always to end with a proper cadence.

Harmonize the following melodies in four parts:

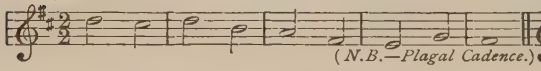
(XXII)



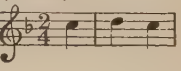
(XXIII)



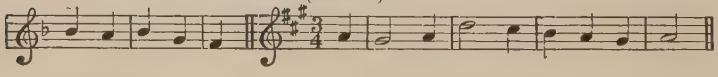
(XXIV)



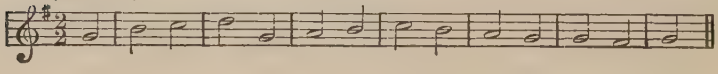
(XXV)



(XXVI)



(XXVII)

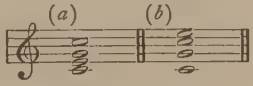


CHAPTER VI.

THE INVERSIONS OF THE TRIADS OF A MAJOR KEY.

160. Hitherto all the chords we have used have been in their root positions, but in order to obtain greater variety of harmony, they can be, and frequently are, *inverted.* The inversion of an interval was defined (§ 25) as placing the lower note above the upper, or the upper below the lower. But it is possible to invert some of the intervals of a chord without inverting the chord itself. Thus if we compare the two positions

Ex. 104.

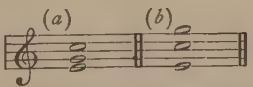


(*a*) and (*b*) of the chord of C, we shall see that at (*a*) E is a third below G, and at (*b*) the relative position of the two notes is changed, and E is a sixth above G—the inversion of a third. But the chord itself is not inverted, for the root, C, is in the bass in both cases.

161. *A chord is said to be inverted when any other note than the root is placed in the bass.* A moment's thought will show the student that the number of inversions of which any chord is susceptible must be one less than the number of notes which it contains. Thus a triad, which consists of three notes, has two inversions, because it contains two notes besides its root, and either of these notes can be placed in the bass. Similarly a chord of the seventh, because it contains four notes, has three inversions, and so on. If the third of the chord (the first note above the root,) be in the bass, we have the first inversion; if the fifth (the second note above the root,) be in the bass, we have the second inversion, etc. The number of the inversion can always be found by noticing which note in the series of thirds above the root is in the bass.

162. The first inversion of a chord, as we have just said, has the third in the bass. As in the root position, it makes no difference to the nature of the chord which of the other notes stands next above the third.

Ex. 105.

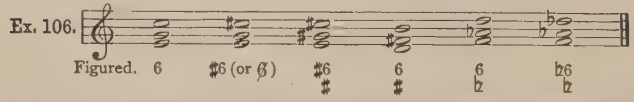


Both (*a*) and (*b*) are equally first inversions of the chord of C. The root, which was before a third below E, is now inverted with respect to that note, and is a sixth above it; but the fifth of the chord, G, which in the root position was a third above

E, is still a third above it. The first inversion of a triad is therefore called the chord of the sixth and third, or, more usually, the *chord of the sixth*, the third being always implied when the shorter name is used.

163. In order that it may be known, when only the bass is given, what harmony is to be placed above it—that is, whether the bass note is the root, or one of the other notes of a chord, and therefore whether we have an inversion, we use what was formerly called *Thorough Bass*, but is now more usually spoken of as *Figured Bass*. This is a kind of musical short-hand, which indicates, by one or more figures placed under (or sometimes over) the bass note—sometimes, also, by the absence of any figures—what notes are to be placed above the bass. A common chord in its root position, as it contains the fifth and third of the bass note would be figured $\frac{5}{3}$— the larger figure, when there is more than one, being almost invariably placed at the top. But, as a matter of actual practice, the common chord in its root position is not figured at all, except when one of its notes requires an accidental before it, or when two or more chords one of which is a common chord in root position, are to follow one another on the same bass note. (*See* § 177.) Whenever a bass note has no figures under it, a root position of a triad is always implied. The exercises in Chapters IV and V have therefore no figures under the bass, except the one given, for the student's assistance, below the first note.

164. As a first inversion has the intervals of a third and sixth above the bass note, its full figuring would be $\frac{6}{3}$. But just as we speak of it merely as a "chord of the sixth," we mostly figure it only with a 6. In a chord of the sixth *the third is always implied*, but it is not specially marked, excepting when it requires an accidental, and in that case the accidental ♯, ♮ or ♭ is written without the figure 3. *An accidental without a figure at its side always refers to the third of the bass note.* But if the sixth required an accidental this would have to be written thus—♯6, ♮6 or ♭6, sometimes also 6♯, 6♮ or 6♭. A sharpened note is frequently indicated by a stroke drawn through a figure thus—6. The following examples will make this clear.

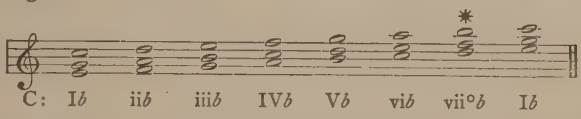


165. It must be always remembered that inversion does not change the root of a chord, but only *the position of the root*, by putting it in one of the upper parts instead of in the bass. Thus, in Ex. 105, C is still the root. In § 41 we showed how to

indicate the roots; and the student will by this time have no difficulty in doing so with chords in root position. We now show how to apply the same method with all inversions. It is clear that the root position is the *first* position of any chord; the first inversion is the *second* position, the second inversion is the *third* position, and so on. To indicate the position, as well as the root of a chord, we add after the Roman numeral the letters of the alphabet (*a*, *b*, *c*, etc.). Thus I*a* indicates the tonic chord in root position, I*b* and I*c*, the first and second inversions of the same chord. We shall see later how to mark discords and their inversions. It need only be added that in the root position of a chord, we omit the '*a*' as superfluous; the numeral without any letter after it indicates a root position.

166. All the triads given in Ex. 62 can be used in their first inversion; and we shall thus have a chord of the sixth on every degree of the scale.

Ex. 107.



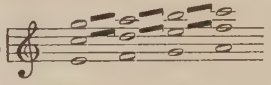
In four-part harmony, one of these notes must be doubled, just as in the root position. The rule given in § 97, to double a primary, rather than a secondary note, applies to first inversions as well as to root positions. But the objection to doubling the fifth of the chord no longer holds good; for the fifth is now the third above the bass. For the same reason, while the fifth is often omitted in a root position (§ 102), it is hardly ever good to omit it in a first inversion, because of the thin effect of a bare sixth.

167. At * in the last example will be seen the first inversion of the diminished triad on the leading note. Though this chord is very rarely used in its root position (§ 99), it is very often to be met with in its first inversion. Here, though the F and B are still dissonant to one another, they produce a much less harsh effect than in their root position, because now both the notes are consonant to the bass. Greater freedom is therefore allowed in their use and in their progression.

168. As the root and fifth of this chord are (as just said) dissonant to each other, if we double the fifth, we make the discord harsher. The root, being the leading note, must on no account be doubled, except in the repetition of a sequence. As a general rule, *in the first inversion of a diminished triad, the best note to double is the bass note.* But it is not forbidden to double the fifth (the primary note of the chord), if a better progression can be obtained thereby.

169. Provided that the general laws of part-writing given in Chapter III are observed, there are no special restrictions as to the treatment of first inversions when they occur singly, that is between other positions of chords. But when two or more first inversions follow one another, a little care is needed in their management. If, for instance, in the series of sixths given in Ex. 107 we place the fifth of each chord in the upper part,

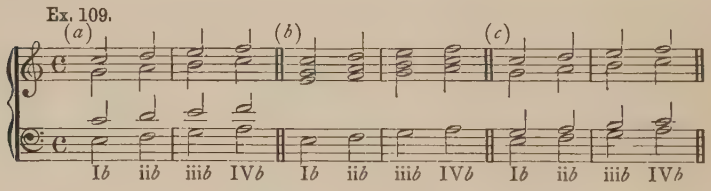
Ex. 108.



it is clear that we shall have a series of consecutive fifths with the roots. Hence we get the following important rule:—*When two or more first inversions follow one another, the root should mostly be in the upper part, especially if the bass moves by step.* The fifth will then be a fourth below the root, and consecutive fourths are not forbidden between upper parts (§ 78).

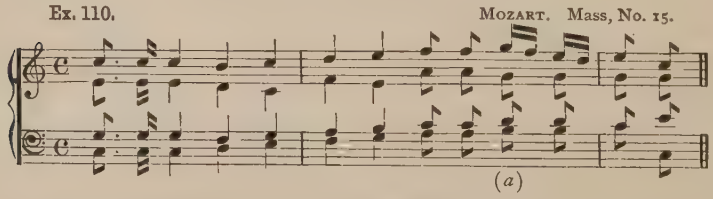
170. Another point to be attended to in a series of sixths is the doubling of one of the notes of the chords. If either the root, the third, or the fifth be doubled by the same voices in each chord,

Ex. 109.



it is clear that there will be consecutive octaves, sometimes also, as at (*a*) consecutive fifths. From this we deduce another rule:—*The same note of the chord must not be doubled in the same parts in two consecutive first inversions.* The usual plan adopted is to double the root and the third of the chord alternately, as in the following example from Mozart:

Ex. 110. MOZART. Mass, No. 15.

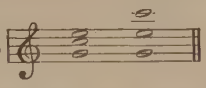


It will be seen that in such a passage as this it is not possible to double the primary note of each chord. Here, in the first and second crotchets of the second bar, to double the G would make consecutive octaves.

171. The student must be careful never to double his leading

note in such a series of sixths as the above. To avoid this, a little forethought will often be required. For instance, in the above passage, he will see that at (*a*) the root, and not the third of the chord, must be doubled; from this point he should reckon back to the beginning of the series, doubling root and third by turns, to see which to double in the first chord of the series. Sometimes also he can help himself by doubling the fifth of the chord (the third above the bass).

172. The second inversion of a chord has the fifth in the bass.

Ex. 111. 

In this chord both root and third are above the fifth, and are therefore inverted with respect to it. The root is now a fourth and the third is a sixth above the bass note. This inversion is therefore called the chord of the sixth and fourth, or more commonly "the chord of six-four." It is figured $\frac{6}{4}$. The lower figure cannot be omitted, or there would be no means of distinguishing between this chord and the first inversion.

173. If the student will play this chord on the piano, he will notice that its effect is much more unsatisfying than that of either the root position or the first inversion; it requires, in fact, to be followed by some other chord, such as a common chord in its root position on the same bass note. This is because *a fourth with the bass* (though not between two upper parts) *produces the effect of a dissonance*. For this reason the second inversions of chords require special treatment, as will be seen directly.

174. We said in § 165 that in marking roots second inversions were distinguished by a '*c*' after the numeral (I*c*, ii*c*, etc.); to assist the student in finding the root of a chord at once from the figured bass, the following rules will be of great service:

I. If there be no figures under the bass note, or if the only figures be *odd* numbers, the chord is in root-position.

II. If there be any *even* number in the figures, that number shows the root of the chord; and if there be more than one even number, the *lowest* even number gives the root.

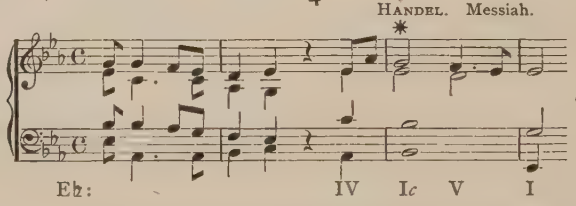
175. A little thought will make these rules quite clear. We have already seen (§ 163,) that the figuring of a root-position of a chord would be $\frac{5}{3}$—both odd numbers; the full figuring of a first inversion is $\frac{6}{3}$ (§ 164), in which 6—the only even number—is the root; in the second inversion both numbers are even, and 4, the smaller of the two, is the root. These useful rules apply, not only to the triads of which we are now speaking, but to all chords of the seventh and ninth; for the higher discords, (above

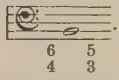
the ninth), as will be seen later, and for suspensions, they need modification. But by their means the student will save himself much trouble in finding his roots.

176. Though it is possible to take any triad in its second inversion, the employment of any but primary triads in this position is extremely rare. We shall therefore first speak of the three chords I*c*, IV*c*, and V*c*, afterwards giving examples of the less frequently used second inversions of secondary triads.

177. The second inversion by far the oftenest met with is that of the tonic chord (I*c*), and, in the majority of cases this is employed cadentially, that is, in approaching a cadence. The student has already learned (§ 117,) that the most usual form of cadence, the authentic, is made with the chords V–I. If I*c* precedes V, we have a "cadential $\frac{6}{4}$."

Ex. 112. HANDEL. Messiah.

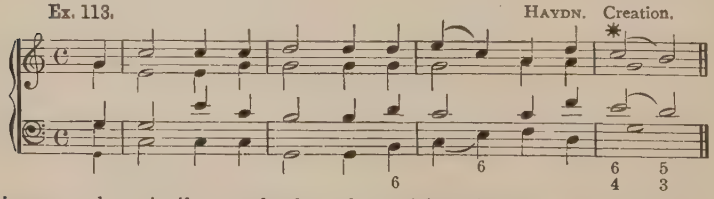


We have only marked the roots for the last chords here. In a cadential $\frac{6}{4}$, I*c* is followed by *another chord on the same bass note, or its octave;* this is one of the cases in which it is necessary to figure the root-position of a common chord (§ 163). The B in the bass would be figured  . When two figures

are put under one bass note, each represents a chord of half the value of that note, unless it be dotted, when the first chord will have two thirds, and the second one third of the whole value.

178. Our next example,

Ex. 113. HAYDN. Creation.

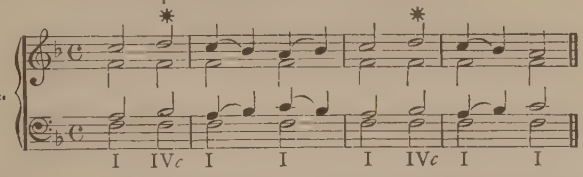


is somewhat similar to the last, but with a difference. Here the passage ends, not with a full cadence, but on the dominant chord, the two final chords being I*c* and V. A cadence the last chord of which is, as here, the root position of the dominant is called a HALF CADENCE; these are only found as middle, not

as final cadences. In this example, instead of marking the roots, we have figured the bass.

179. If we look at the last two examples, we shall see that in each case the $\frac{6}{4}$ chord comes upon an *accented* beat. This is always necessary in a cadential $\frac{6}{4}$. A second inversion, when followed by another chord on the same bass note must always be on a strong accent, unless it has been also *preceded* by a chord on the same bass note, as in the well-known "Sicilian Mariners' Hymn," where the $\frac{6}{4}$ chords are not cadential.

Ex. 114.

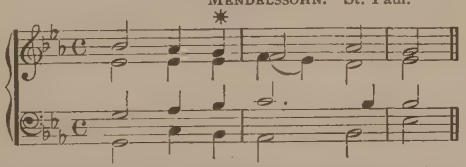


Here the second inversions of IV are preceded, as well as followed by I. The Bs in the treble and tenor are passing notes (§ 316).

180. We next give an example of I*c* not followed by another chord on the same bass note:

Mendelssohn. St. Paul.

Ex. 115.

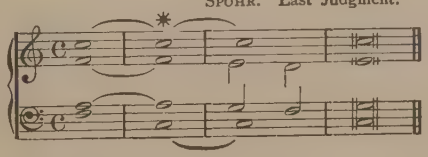


When a second inversion is not used cadentially, the bass should move by step, and the following chord may be either an inversion, as here, or a root position, as in Ex. 118 below. In this case, the $\frac{6}{4}$ chord may occur either on an accented or an unaccented beat.

181. The second inversion of the subdominant (IV*c*,) like that of the tonic, is mostly used cadentially. As the bass note is now the tonic of the key, and the progression will be IV*c*–I, it is clear that the cadence will now have a plagal character (§ 117). It is not a *full* plagal cadence, because IV is not in root position.

Spohr. Last Judgment.

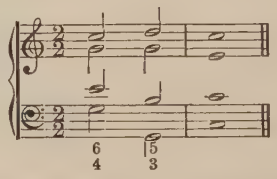
Ex. 116.



This inversion of IV is less often used than I*c*, and it is rare to find it followed by a chord on the next degree of the scale.

182. It was said in § 173 that the fourth above the bass had the effect of a dissonance. The general tendency of a dissonance is to fall one degree. When, therefore, a $\frac{6}{4}$ chord is followed by a $\frac{5}{3}$ on the same bass note, *the 4 should fall to 3, and the 6 to 5*. It will be seen that this is the progression of the parts in Exs. 112, 113, and 116. It is *possible* also for the 4 to rise to 5, in which case 6 falls to 3:

Ex. 117.

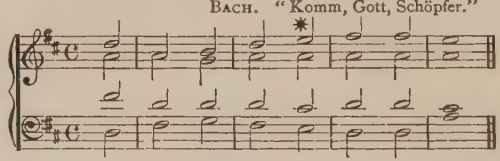


but this is in general less good. The student is advised for the present to adhere strictly to the rule just given.

183. The second inversion of the dominant chord (V*c*,) is not uncommon, as in the following passage:

Ex. 118.

Bach. "Komm, Gott, Schöpfer."

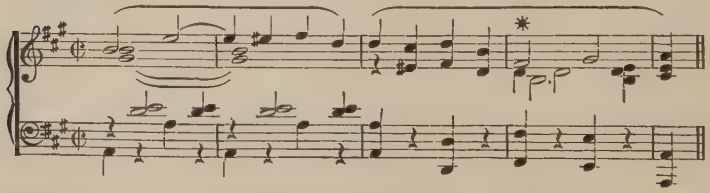


As the bass note of this second inversion is the supertonic, V*c* can never be used cadentially; for V–ii does not form a cadence. Here therefore the bass should always move by step, as in this example. The only second inversions which can be followed by another chord on the same bass note are I*c* and IV*c*.

184. The second inversions of secondary triads are very rare, and, like V*c*, and for a similar reason, they cannot be used cadentially. We give a few examples of their employment.

Ex. 119.

Schumann. Paradise and the Peri.

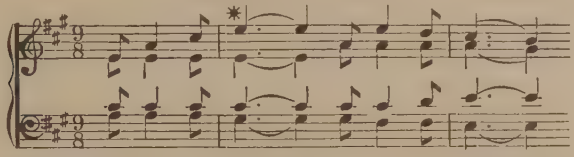


Here, at ✳ is seen the second inversion of the supertonic chord (ii*c*). It is preceded by the first inversion (ii*b*) of the same chord, and the bass falls a step to the dominant.

185. The triad on the mediant is less often met with than the other chords of the major key, and its second inversion (iii$c$,) is exceedingly rare. The following is one of the best examples of its use:

W. S. Bennett: Part Song, "Come, live with me."

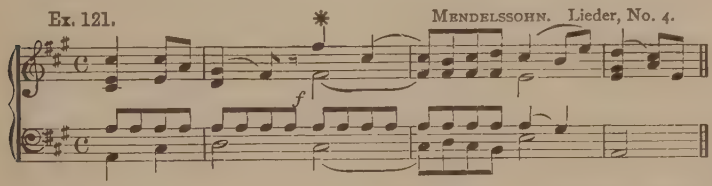
Ex. 120.



As in the preceding examples, we have marked the $\frac{6}{4}$ chord with ✳. Note that here the bass of the chord is approached and left by step.

186. In the following example of the second inversion of the submediant chord (vi$c$)—

Ex. 121. Mendelssohn. Lieder, No. 4.

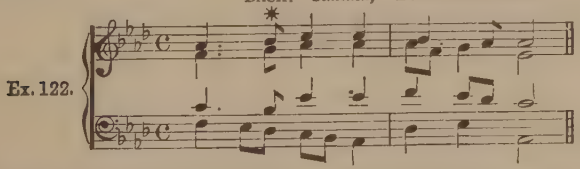


the bass is again approached and left by step. In this passage will also be seen a cadential $\frac{6}{4}$ (Ic V).

187. The second inversion of the diminished triad on the leading note (vii°c,) is only very rarely to be found in four-part harmony.

Bach. Cantata, "Dazu ist erschienen."

Ex. 122.



Our extract is from a Church Cantata by Bach, and it gives an illustration of the freedom of his part-writing. In the second bar will be seen consecutive fifths between the treble and tenor. But here the treble note (A♭) is not a note of the harmony, but an *anticipation* of a note of the next chord, as will be explained later (§ 325). The student is advised not to imitate such licences until he has acquired the skill in part-writing which Bach possessed. The progression of the alto at the end of this example illustrates Bach's partiality (referred to in § 100) for taking the leading note down to the fifth of a chord in a cadence.

188. In consequence of the dissonant effect of the fourth with the bass, it is necessary to be careful in approaching, as well as in quitting a $\frac{6}{4}$ chord. The rules for approaching this chord, which are deduced from the practice of the great masters, and which are all illustrated by the examples above given are the following:

I. A second inversion may be approached either by leap, as in Ex. 113, or by step, as in Exs. 112, 120, 121, from the root position of another chord.

II. It may be approached by leap, as in Exs. 116, 119, from another position of the same chord.

III. It may be approached by step (*but not by leap*) from the inversion of another chord, as in Exs. 115, 118.

IV. It may be preceded by a different chord upon the same bass note, as in Ex. 114.

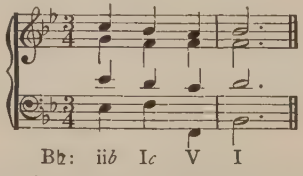
189. No less important than the rules just given are those which regulate the leaving a second inversion. These rules are three in number—

I. The bass of any second inversion may move by step of a tone (Exs. 115, 118, 119, 120,) or a semitone (Exs. 121, 122,) upwards or downwards; and the following chord may be either in root position (Exs. 118, 119, 120,) or in an inversion (Exs. 115, 121, 122).

II. The second inversions of the tonic and subdominant chords *only* (I*c*, IV*c*,) may be followed by another chord on the same bass note or its octave (Exs. 112, 113, 114, 116, 117), when the $\frac{6}{4}$ must be on a strong accent, unless it has been also preceded by a chord on the same bass note.*

III. The bass of a second inversion may, while the harmony remains unchanged, leap to another note of the same chord, provided that, when the harmony changes, it returns either to

* In a cadence in triple time, I*c* is often found on the second, instead of on the first beat of the bar, as in 'God save the King.'

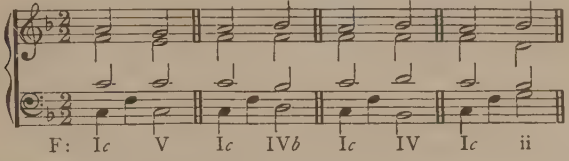


The rule given in the text is not really broken here. Every bar in music contains an accented and an unaccented part; in duple time each part is of equal length (𝅗𝅥 𝅘𝅥); in triple time the accented part is double the length of the unaccented (𝅗𝅥 𝅘𝅥, not 𝅗𝅥 𝅘𝅥). The second beat therefore is part of the accented beat, though less strongly accented than the first.

its former note, or to the next note above or below; *e.g.*:

(*a*) Good. (*b*) Good. (*c*) Good. (*d*) Not good.

Ex. 123.

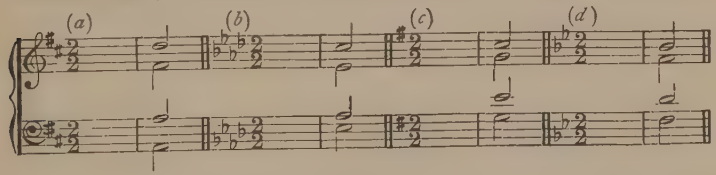


In other cases it is not good for it to leap.*

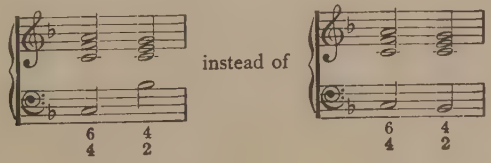
190. The best note to double in a second inversion is not the root of the chord, even when this is a primary note; because the root is in this position dissonant to the bass (§ 173). The bass note itself is almost always the best to double; but it is possible, and occasionally even advisable, to double either the third or the root of the chord. In the extremely rare iii*c*, (see Ex. 120,) the bass note, being the leading note, must of course not be doubled; here the third of the chord (the primary note,) is, as in other positions of the same chord, the best to double.

191. There is no point which gives the beginner so much trouble when he attempts to harmonize a melody as the management of second inversions. Before proceeding further, therefore, we give a few short exercises on these alone, restricting ourselves to the primary triads. The $\frac{6}{4}$ of the secondary triads had better be avoided by beginners altogether. Each of the following exercises consists of only three chords, of which we give the second. The student will see by its position whether the given chord is the first or second of the bar. He must carefully attend to all the rules in §§ 188, 189. Each exercise should be worked in *two different ways*.

I. Precede each of the following chords by another position of *the same chord*, and treat it cadentially (§ 177.) Mark the roots.



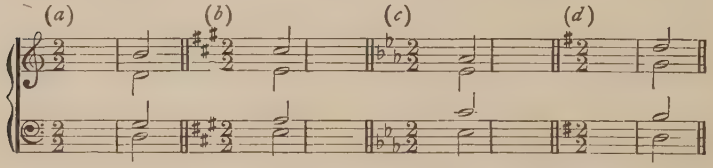
* An apparent, but not real, exception to this rule is when the bass of a $\frac{6}{4}$ chord rises a seventh to the *octave* of the note below; *e.g.*



II. Precede each of the preceding chords by the root position of a *different* chord, and follow as before.

III. Precede each of these chords by the *inversion* of a different chord, following as before.

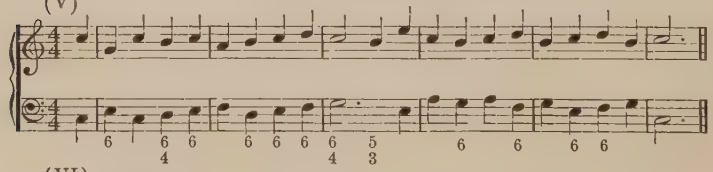
IV. Precede each of the following chords by a different chord, either in root position or in an inversion; and follow each by a chord *upon a different bass note*.



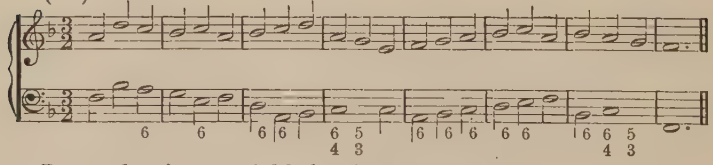
192. The student should now write some exercises above a given figured bass. We strongly advise him in all cases to mark his roots on a blank staff under the bass, that he may see the harmonic progressions clearly; a thorough understanding of these will be of great assistance to him when, at the end of this chapter, he has to choose his own chords for harmonizing melodies. The method of finding the roots has been explained in § 174. In the first two of the following exercises, the treble, as well as the bass, is given.

Add Alto and Tenor parts to the following Treble and Bass.

(V)

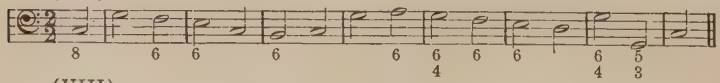


(VI)

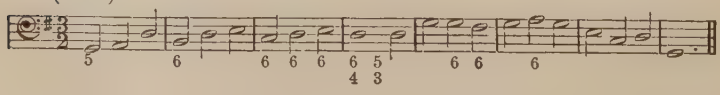


Bass only given. Add the three upper parts.

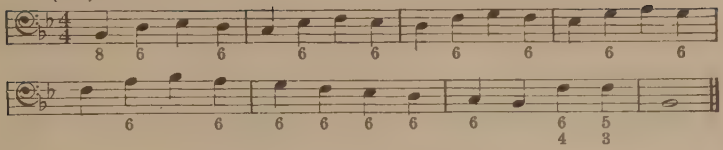
(VII)



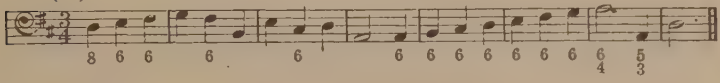
(VIII)



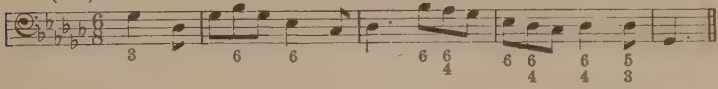
(IX)



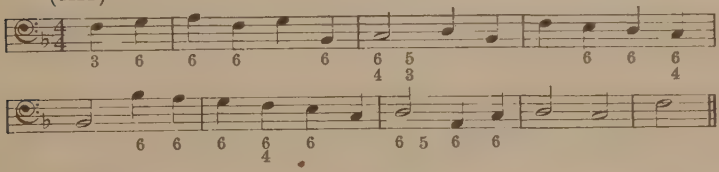
(X)



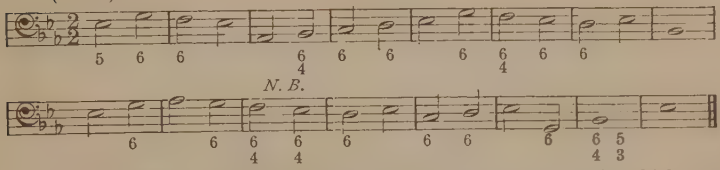
(XI)



(XII)

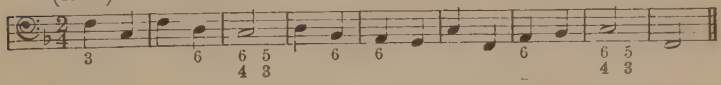


(XIII)

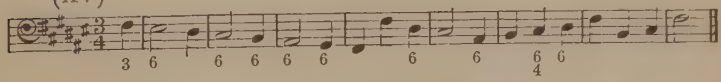


N.B.—This progression is introduced to show the only case in which one second inversion can be followed by another. The student must take care not to write consecutive fourths above the bass.

(XIV)

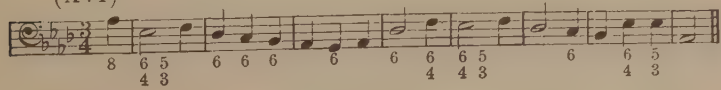


(XV)

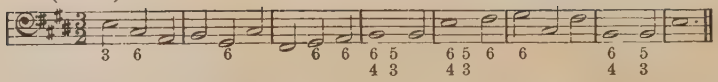


The following exercise is written to illustrate the use of two successive second inversions. Observe that here, as in Exercise XIII, they are *on adjacent degrees of the scale.*

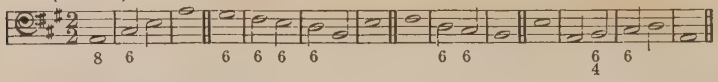
(XVI)



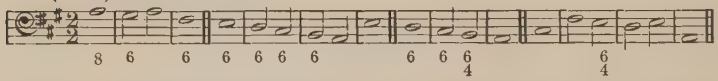
(XVII)



(XVIII) Double Chant.

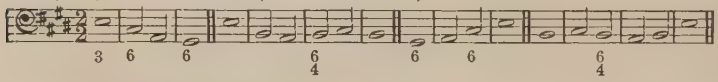


(XIX) Double Chant.

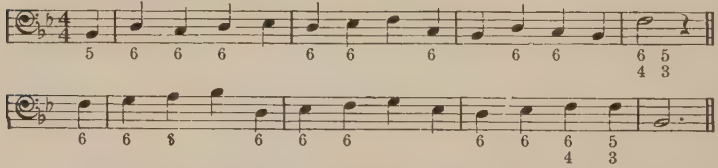


The following is an exampl: of a Double Chant *per recte et retro*, that is "forwards and backwards." This is a chant in which the third phrase is the first read backwards, and the fourth is the second read backwards. This is the case, not only with the bass, but with all the upper parts. The working of this exercise will probably be found less difficult than the student may anticipate.

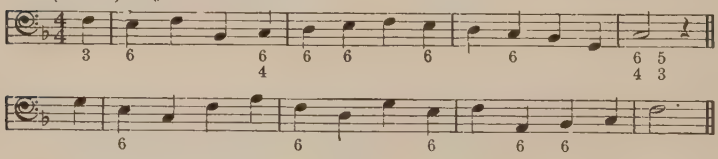
(XX) Double Chant (*per recte et retro*).



(XXI) Hymn Tune.

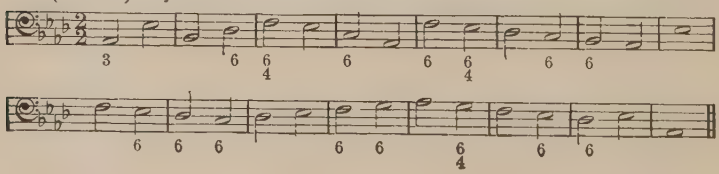


(XXII) Hymn Tune.

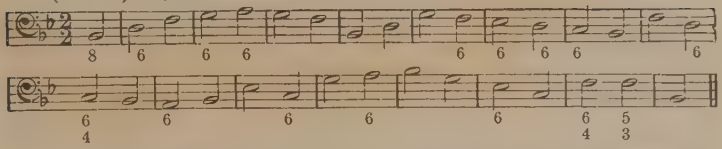


The following tune is written to illustrate the occasional employment of the second inversions of secondary triads.

(XXIII) Hymn Tune.

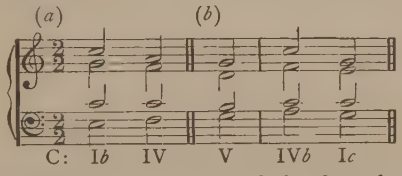


(XXIV) Hymn Tune.



193. We now proceed to the harmonization of simple melodies, using inversions, as well as root positions of chords. Before we give any further hints as to the choice of harmonies, it is needful that the student should enlarge his conception of the meaning of the term "progression of roots." When, as in the last chapter, only root positions are employed, it is evident that the progressions of the roots and of the bass will be identical. But when inversions are also used, this often ceases to be the case. For example:

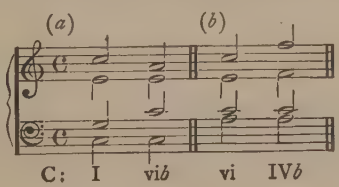
Ex. 124.



At (*a*) it is clear that C is the root of the first chord, and F of the second; and therefor here the root rises a fourth, exactly as it does in Ex. 94 (*a*) (§ 146) But the *note* C, which is the root of the first chord, does not rise a fourth, but falls a third in the treble, and remains stationary in the tenor. Similarly, at (*b*), the root evidently falls by step from the first chord to the second; but G rises in both parts. Between the second and third chords in this example, though the *note* F falls a second, the root progression is that of a falling fourth. Beginners are sometimes confused about this; let it therefore be clearly understood that by "root progression" is simply meant *the distance between the roots of two adjacent chords*, quite irrespective of the progression of the particular note which is the root of the first chord.

194. The recommendations as to root progressions given in the last chapter (§§ 146–152,) mostly apply equally if one or both of the chords be inverted. But the downward root progression of a third (§ 147,) is less good if the second only of the two chords is in the first inversion, because it gives a stationary bass.

Ex. 125.



In general, a stationary bass is undesirable, except in the cadential formula, I*c* V (§§ 177, 178).

195. When the root proceeds by step downwards (§ 149), the *second* of the two chords should always be inverted, except in the progressions vi–V and V–IV, both chords being in root position. The first chord may be either in root position or in an inversion, except in the downward progression from the mediant; iii*b*–ii*b* is good, but iii–ii*b* is bad, and should be avoided.

196. The inversions of secondary triads (ii*b*, iii*b*, vi*b*,) should not be approached or quitted by a larger leap in the bass than a third, the effect of a large leap being weak. This rule does not apply to vii°*b*, which, as we shall see later, (§ 261,) is derived from the dominant—one of the primary chords.

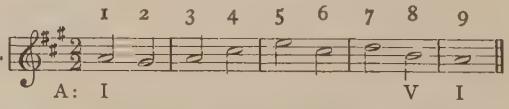
197. In deciding whether to use a root position or an inversion of a chord, one should be largely guided by the resulting movement of the bass, and the natural flow of the other voices. This will be seen when we harmonize a short melody presently; in general a smoothly moving bass is preferable to one with too many leaps.

198. By referring to Ex. 124 (*a*) the student will see that when inversions are combined with root positions, it is possible to have a note common to two chords, even when the bass moves by step (§ 109). The only case in which there is no note common to two chords is when the *roots* are on adjacent degrees of the scale.

199. If, in approaching a cadence, the third chord from the end be the tonic, it is always best to use I*c* rather than I or I*b*. It is, of course, necessary that the chord should be on an accented beat (§ 179).

200. We now fulfil the promise given in Chapter IV (§ 127), and take the same melody which we there harmonized with only the root positions of primary triads, now allowing ourselves the employment of the whole of the diatonic triads of the key, using inversions as well as root positions. It would be easy to write a melody which would offer more variety of harmony than this; but the comparison of the two results will be instructive to the student. We advise him to compare the new harmony, chord by chord, with that previously given in Ex. 84 (§ 126).

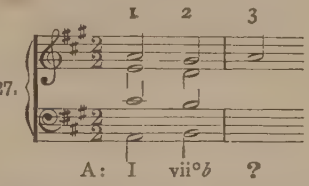
Ex. 126.



201. The first and the two last chords must evidently be the same as before; we therefore mark the roots below them. But for all the intermediate notes we shall have a choice (§ 144).

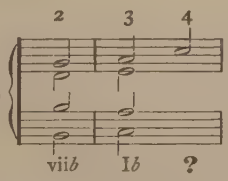
The second note, G, can now not only be, as before, the third of V, but the root of vii°, and the fifth of iii. The last would not be very good, although it could be followed by vi (§ 150), because it is best to begin a piece by defining the key by means of its primary chords. It is therefore better here either to take V, as before, or vii°*b* for the second chord; the latter, though not one of the three primary chords, is (as will be seen later,) derived from the dominant, and, as it contains both the fourth and seventh degrees of the scale, it always, when it follows the tonic chord, clearly defines the key (§ 112).

Ex. 127.



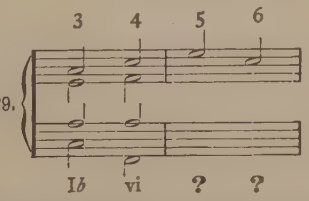
A further advantage of choosing this chord is that the bass is moving by step, instead of leaping, as before. For our third chord IV would be bad here, though it is a primary chord; in root position it would give hidden fifths with outer parts, while IV*b* would make a large leap from one inversion to another, which is mostly undesirable—vi would be possible here; but far the best progression would be to take I again, now in the first inversion (I*b*), to obtain more variety.

Ex. 128.



202. Our fourth note, C, forms part of I, iii, or vi. The mediant chord would be bad here, because the fifth note, E is not a note of vi. We could take I again, in root position; but, to show as many chords as we can, we shall choose vi, taking the root position, as giving the stronger progression. Evidently the bass must fall; let the student ask himself why.

Ex. 129.

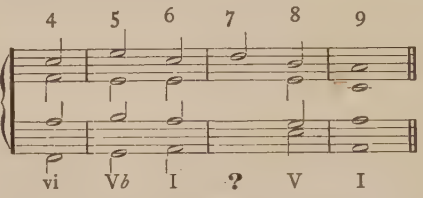


Observe that in the last chord we have doubled a secondary

instead of a primary note, to obtain a smoother motion of the alto.

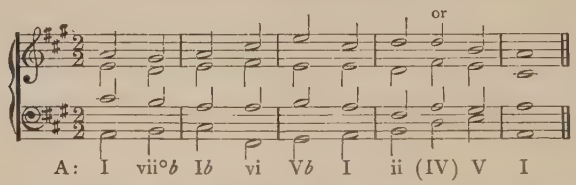
203. It would be quite possible to take iii for the fifth chord; but the same considerations of smoothness cause us to select V*b*, as the bass will then move by step. Obviously the leading note in the bass must rise in the sixth chord, to avoid bad hidden fifths. Here I will be better than vi*b*.

Ex. 130.



As we already know our last two chords, we have only the seventh to fill up. We shall learn later that vii°*b* is very seldom good before V; but ii and IV are equally good here, and it matters not which we choose. We now therefore give the whole melody, with the alternative chords for the seventh note.

Ex. 131.



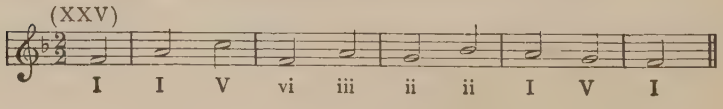
It will be felt at once that this harmonization of the melody is much more pleasant to listen to, and less stiff, than that in Ex. 84. The reason is not so much that we have used secondary as well as primary triads as that we have mixed inversions with root positions.

204. If the student has thoroughly grasped the instructions given in this chapter, he will now be ready to begin to harmonize the following melodies. To assist him, we have, in the first two, marked the roots, *but not the positions* of the chords. The rule (§ 165,) that a numeral with no letter after it indicates the root position of a chord does not apply to these two exercises. The student must decide for himself whether he will take the chord in root position or in one of the inversions.

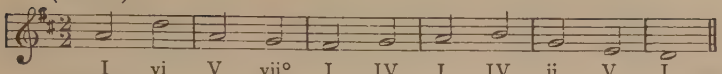
Add Alto, Tenor, and Bass below the following melodies.

Figure the basses, and mark the roots. In Exs. XXV, XXVI the student must select his own positions for the chords.

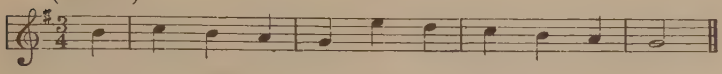
(XXV)



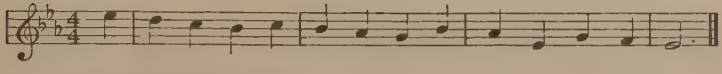
(XXVI)



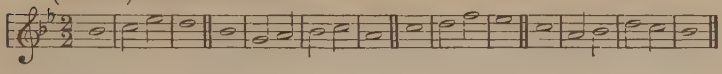
(XXVII)



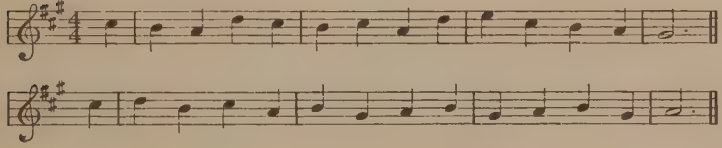
(XXVIII)



(XXIX) Double Chant.



(XXX) Hymn Tune.



205. The student who has worked the exercises here given may next try to compose short phrases of four bars, ending each with a full cadence, and harmonizing with inversions, as well as with root positions. His best plan, if he is able to manage it, will be, not to invent his melody first, and trust to Providence to being able to harmonize it afterwards, but to think of his melody and harmony together. To a musician every melody naturally suggests an appropriate harmony; and the sooner the student is able to realize the close connection between the two, and to think of them simultaneously, the more rapid will be his progress.

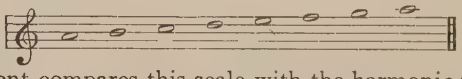
CHAPTER VII.

THE MINOR KEY; ITS DIATONIC TRIADS, AND THEIR INVERSIONS.

206. When treating in Chapter II. (§§ 42–44,) of major and minor keys, it was pointed out that the difference between the two is, that in the latter the mediant and submediant are a semitone lower than the former, the result being, as seen in Ex. 21, that the primary triads on the tonic and subdominant of a minor key are minor, while, because of the necessity of a leading note, the triad on the dominant is the same as in a major key. As with the major key (§ 40), the three primary triads of the minor key contain all the notes of the scale. If we arrange them in order, we have the form of minor scale seen in Ex. 5 (§ 9), which, from the fact that the harmonies chiefly used in modern music are made from it, is known as the *Harmonic Minor Scale*. This form of scale is of comparatively modern introduction; and before speaking of it, and of the chords made from it, it will be needful to say something about other and older forms of the scale, which are still employed, though more often, in the music of the present day, for melodic than for harmonic purposes.

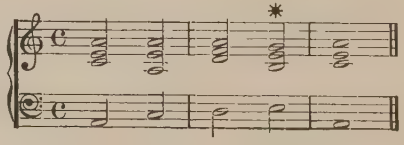
207. It was said in § 45 that many other diatonic scales besides those we have already given were formerly in use. This subject will be treated in Appendix A of this volume; all that need be said here is, that the old ecclesiastical scales, of which we are now speaking, were made by taking each note of the scale, excepting B natural, as a tonic, and using *only natural notes*. If we begin with the note A, we shall have the old "Æolian" scale.

Ex. 132.



If the student compares this scale with the harmonic minor scale given in Ex. 5, and observes the intervals between each note, he will see that the only note which differs in the two scales is the seventh, which in the Æolian scale is a tone, and not a semitone below the tonic; the Æolian scale had in fact no leading note. But it was soon felt that no satisfactory cadence could be obtained if the tonic were approached by a tone, instead of a semitone, from below.

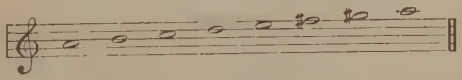
Ex. 133.



It was therefore understood that in approaching a cadence the seventh of the scale was to be sharpened, though in old music the sharp was not always marked.* As the seventh was not invariably sharpened, the sharp never appeared in the key-signature, but would be indicated by an accidental. This alteration changes the Æolian into our harmonic minor scale.

208. As a matter of history, however, this result was not reached by a leap. The old music was mostly written for voices, and augmented intervals were forbidden, as being difficult to sing. But from F ♮ to G ♯ in the now altered scale is an interval of an augmented second. This not being allowed, and the G ♯ being felt indispensable, it became necessary also to sharpen the F, the sixth note of the scale. Here another of the old modes was made available. The Dorian mode, which began on D, had a major sixth from the tonic, as well as a minor third, as the student will see, if he plays the scale of D on white keys only; and its seventh, like that of the Æolian mode, could be sharpened in approaching the tonic. This gave another form of minor scale,

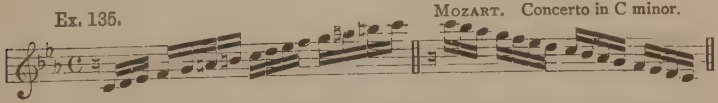
Ex. 134.



which is still in use for melodic, though (as will be seen later) rarely for harmonic purposes. As the necessity of the interval of a semitone between the seventh of the scale and the tonic is not felt in descending, the form of scale last given is chiefly used in ascending passages, the older Æolian form given in Ex. 132 being generally retained in descending. This will be seen in the two following scales, taken from the finale of Mozart's concerto in C minor.

Ex. 135.

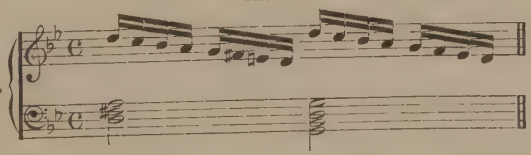
Mozart. Concerto in C minor.



Occasionally the form of the scale with the sharpened sixth and seventh is found also in descending passages, as in the following passage from Handel's 7th Suite de Pièces.

Handel. Suite de Pièces, No. 7.

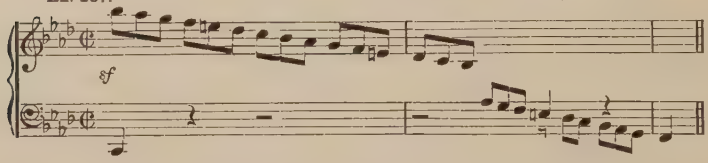
Ex. 136.



* See the article 'Musica Ficta' in Grove's '*Dictionary of Music and Musicians*,' Vol. 2.

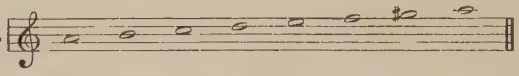
209. We have therefore three different forms of minor scale,—the Harmonic (Ex. 5,) the Æolian (Ex. 132,) and the Dorian (Ex. 134); the last two are generally described as *Melodic* minor scales.* The point in which all these scales agree is that they all have a semitone between the second and third degrees, and therefore a minor third between tonic and mediant. In the music of the eighteenth century, the Æolian and Dorian forms of the scale were the oftenest used, as in Ex. 135 above; in more modern compositions the harmonic form, with its augmented second, is very common in instrumental music, and not infrequent even in vocal music. We give one example.

Ex. 137. BEETHOVEN. Sonata, Op. 2, No. 1.



210. If we compare the harmonic form of the scale of A minor

Ex. 138.



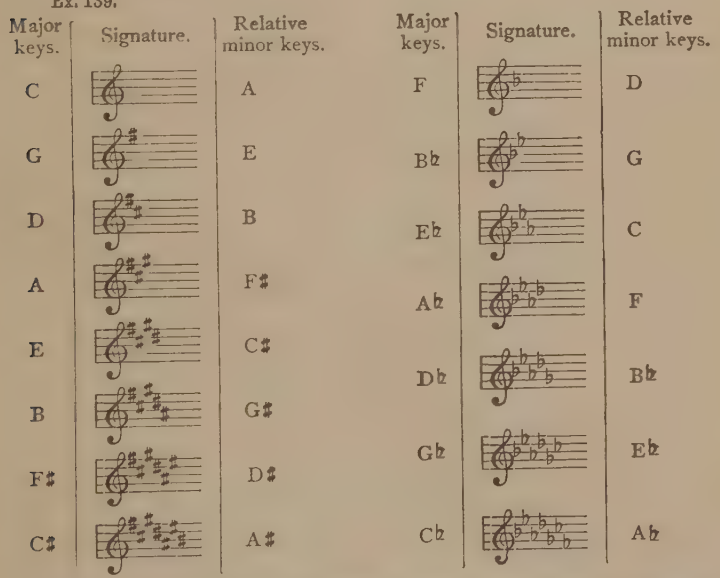
with the scale of C major given in Ex. 4 (§ 9), we shall see that the only note which differs in the two scales is G, which in the minor key is sharpened to form a leading note. In speaking above of the Æolian scale (§ 207), it was said that the sharp before the leading note never appeared in the key-signature, but was either implied or written as an accidental. The same was true of the leading note of the Dorian scale (§ 137); and in the modern harmonic minor, the leading note is also always written with an accidental. There are two good reasons for this; the first is that the seventh is not *invariably* sharpened; and the second, and more cogent is, that if the sharp were marked in the signature, it would entirely disorganize the regular arrangement of key-signatures, with sharps rising by fifths and flats falling by fifths, that has been explained in Chapter II. The signature of A minor, for instance would be and of C minor ; while D minor would be even more confusing— . It must be clearly understood that the leading note of the minor key,

* Some writers call these forms of the minor scale "arbitrary"—an unfortunate word, as they are really older forms, and by no means merely arbitrary alterations.

although it has an accidental before it, is not a *chromatic* note; it belongs to the diatonic scale, and is not borrowed (§ 35,) from any neighbouring key. It must also be noticed that, as the leading note is not written in the signature, it always requires to be indicated by an accidental in the figured bass of a minor key, except when it is itself the bass note. The dominant chord in root-position has always either a ♯ or a ♮, *without a figure at its side* (§ 164,) below it, while the augmented triad (§ 214) in root position will be figured ♯5 or ♮5, according to the key.

211. As the G♯ in Ex. 138 is always written as an accidental, it is evident that the keys of A minor and C major must have the same signature. A major and a minor key which have the same signature are called Relative major and minor keys;* and the tonic of a minor key is always a minor third *below* the tonic of its relative major, while, conversely, the tonic of a major key is always a minor third *above* the tonic of its relative minor. The major key-signatures were given in Ex. 25 (§ 53); we now give their relative minors;

Ex. 139.



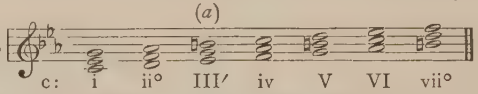
It will be be seen that the extreme minor keys, like the major, have enharmonic equivalents.

* There is no *harmonic* relation between the two keys; such relation is found, as we have already seen (§ 42), between a major key and its *tonic* minor. In Germany the term "parallel" is used instead of "relative." We retain the usual English term, though the German equivalent is perhaps preferable.

212. A major and a minor scale which begin upon the same key-note are called *Tonic Major and Minor scales*, and the keys to which these scales belong are called Tonic Major and Minor keys. By examining the table in Ex. 139, the student will see that every major scale has three sharps more, or (which comes to the same thing) three flats fewer, than its tonic minor; and conversely that every minor key has three flats more or three sharps fewer than its tonic major. It is obvious that taking away a sharp and putting on a flat produce the same result—that of lowering a note by a semitone.

213. With occasional exceptions, to be referred to later, the diatonic triads of the minor key are made from the harmonic form of the scale given in Ex. 5. But, owing to the difference in the third and sixth notes of the scale, we find, if we place a diatonic triad above each degree, that we shall obtain quite a different series of chords from those of the major key.

Ex. 140.

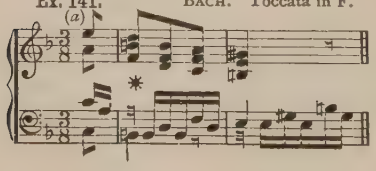


If we compare this series of triads with those of the major key given in Ex. 62 (§ 89), we shall see that the only two which are identical are V and vii°, because every other triad contains either the third or the sixth of the scale. The tonic and subdominant now take a minor chord above them, and the submediant a major one; while the supertonic, as well as the leading note, now bears a diminished triad.

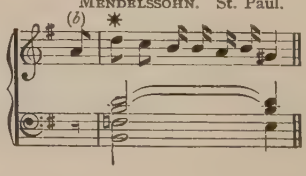
214. At (*a*) is seen a chord of a kind not previously met with. It contains a major third, and an *augmented*, instead of a perfect fifth, and is therefore not a common chord. It is called an AUGMENTED TRIAD, and is only found on the mediant of the minor key. In marking our roots, we put a capital numeral to this chord, because it has a major third (§ 41); the augmented fifth is shown by the acute accent (′) placed after and above the numeral. Observe that the key is now indicated by a small, not by a capital, letter.

215. Like the diminished triad on the leading note of the major key, the corresponding chord in the minor key is rare in its root position. The diminished triad on the supertonic is however more frequently to be found in this form, as in the following examples, at ✳.

Ex. 141. BACH. Toccata in F.



MENDELSSOHN. St. Paul.

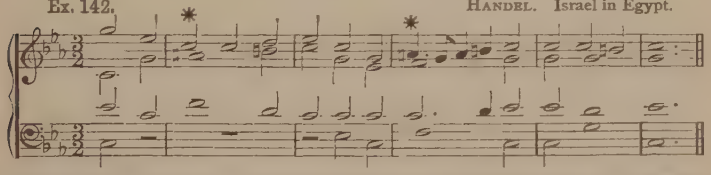


Though both these extracts are from pieces in major keys, it happens that both are here in the key of A minor. It will be seen that in each case the chord following the dissonance has a root a fourth above that of the dissonance itself. We shall find later, when we have to treat of dissonant chords, that this is a very frequent resolution for a discord.

216. The augmented triad on the mediant is not very frequently employed, the effect of the dissonance being rather harsh. It is best followed, like the mediant chord in the major key (§ 150,) by the chord of the submediant,—the root rising a fourth (III′–VI). This applies also to the first inversion of the same chord (III′*b*–VI).

217. It was said in § 208 that the Dorian mode had a major sixth as well as a minor third. When this sixth is used in a minor key, it is called the "Dorian sixth." Evidently it gives a major, instead of a minor, chord on the subdominant. Such a chord is very often found in the works of Bach and Handel, in whose time the employment of the Dorian mode was still common.* We give a few characteristic examples.

Ex. 142. HANDEL. Israel in Egypt.

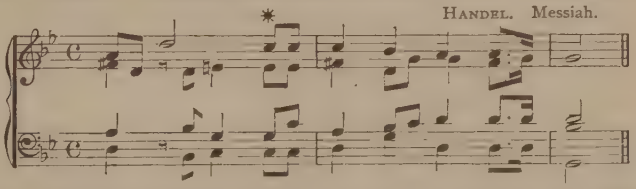


Here we see at * the major chord on the subdominant, followed the first time by the incomplete chord of vii°*b*, with the third omitted, and the second time by i.

218 Another very fine instance of the use of the Dorian sixth is found in Handel's "Behold the Lamb of God," in the 'Messiah.'

HANDEL. Messiah.

Ex. 143.



Here the major chord on the subdominant is preceded by i*b*, and followed by the chord of the dominant seventh. In marking

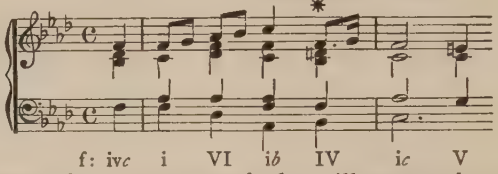
* This use of the Dorian mode is the explanation of the fact that in music of the seventeenth and the first part of the eighteenth centuries the signatures of minor keys generally contain one flat less than they would have on our present plan. Thus in old church music we often find C minor with only B♭ and E♭ in the signature; in the Dorian mode the A would be natural. Similarly, Bach's great organ fugue in D minor (Dorian,) has no B♭ in the signature.

the roots of passages containing this chord, it must of course be indicated IV, not iv.

219. In modern music the use of this chord is much rarer. An interesting example of the peculiar effect of its employment will be found in the following passage:

Mackenzie. The Bride.

Ex. 144.

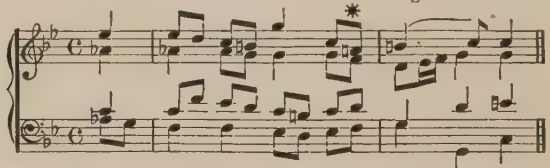


In this passage the roots are marked, to illustrate what was said in the last paragraph.

220. More rare than the employment of the major (Dorian,) sixth of the scale in the subdominant chord is its use as the fifth of the supertonic chord, which then, instead of being a diminished triad (§ 213), becomes identical with the chord (ii,) in the major key. The following example by Bach shows the chord in question.

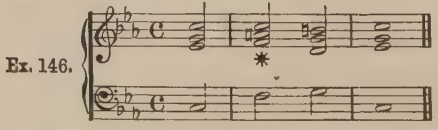
Bach. Cantata "Ich bin ein guter Hirt."

Ex. 145.



The last chord of this example will be explained presently (§ 229). These examples are given because of their historical importance, and are not intended for the imitation of the student. Our feeling of tonality is so much more definite than that which existed 150 years ago, at the time the passage just quoted was written, that the major sixth of the scale produces a disturbing effect on the key unless very carefully managed. It is therefore better avoided, and it is especially unpleasant when the subdominant chord comes between the tonic and the dominant, as below.

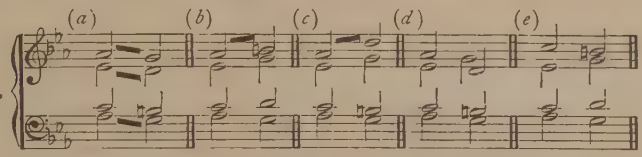
Ex. 146.



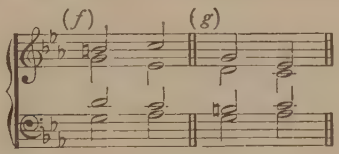
221. The general rules for the progression of parts and the doubling of notes already given apply equally to the minor and to the major key; but there is one very important rule in addition, which concerns the minor key exclusively. We often meet with the progression from dominant to submediant, or the converse,

from submediant to dominant. If we double the root in the submediant chord of a minor key when it is followed by the dominant chord, we shall find ourselves in difficulties.

Ex. 147.



We evidently cannot proceed as at (*a*), for this gives consecutive fifths and octaves; neither can we avoid these as at (*b*) or (*c*), because an augmented interval in the melody is seldom good unless both the notes belong to the same harmony, which is not the case here. At (*d*) the treble and alto parts cross, which is bad, and besides this we still have distinctly the effect of fifths and octaves as at (*a*). The only right way is to double the third instead of the root in the submediant chord, as at (*e*). In the same way, if the dominant chord comes first, as at (*f*) (*g*),



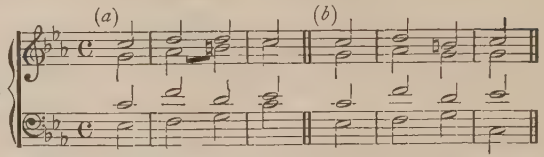
it will equally be needful to double the third in the second chord. The rule, which must be most carefully observed, is this: *Whenever in a minor key the chord of the dominant precedes or follows that of the submediant, the third* (*and not the root*) *must be doubled in the submediant chord.*

222. It will be noticed that the submediant is a secondary note of the key, and that the tonic—the third of the submediant chord—is a primary note (§ 97). In a minor key the submediant is seldom a good note to double; and when it occurs in *any* chord (ii°, iv, or VI) which is followed by the dominant chord, it should not be doubled at all. The reason is that, as we saw in Ex. 147, the root is the only note of the dominant chord to which in most cases the submediant can go; and if this note be doubled, we shall have the same bad progressions shown in Ex. 147, (*a*) (*b*) (*c*) (*d*).

223. All the diatonic triads of the minor key like those of the major, can be used in their first inversion. The general rules given in the sixth chapter (§§ 169–171) are still to be observed, and care must be taken to avoid, wherever possible, the interval of the augmented second. Thus the following progression at

(*a*) is faulty, and should be corrected as at (*b*).

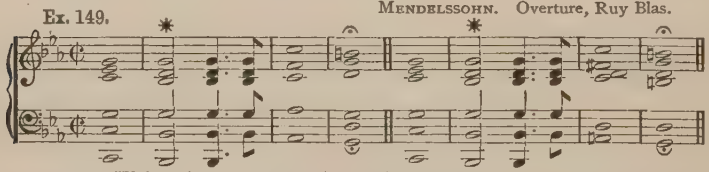
Ex. 148.



The student can always avoid the augmented second, if he will remember the following rule:—*Whenever in a minor key the submediant and leading-note are found in two adjacent chords, they must not be both in the same voice.**

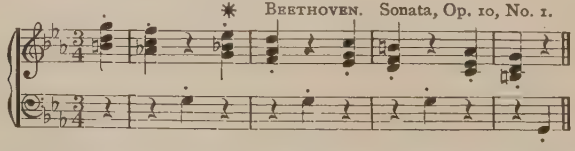
224. In addition to the first inversions of all the triads given in § 213, there is one first inversion to be met with under special conditions with which we have not yet made acquaintance. If the bass moves by step from tonic down to submediant it sometimes takes the *minor seventh* of the scale on its way instead of the leading note; and *in this case only* (but not in the reverse direction) the minor seventh is allowed to bear a first inversion. This chord is only allowed when preceded by the tonic in the bass and also followed by the note below; either of these notes may, however, bear a chord either in root position or in an inversion. The following is an excellent example of the employment of this chord. It will be seen that on its second occurence the bass descends a semitone, instead of a tone, to a dominant discord in the second inversion.

Ex. 149. MENDELSSOHN. Overture, Ruy Blas.



225. This minor seventh is evidently a survival of the Æolian scale seen in Ex. 132, though in modern music its employment is restricted. It is sometimes also found, under the same restrictions—that is, descending by step from tonic to submediant—in other chords of which the seventh degree of the scale is one of the notes, as in the following passage:

Ex. 150. BEETHOVEN. Sonata, Op. 10, No. 1.

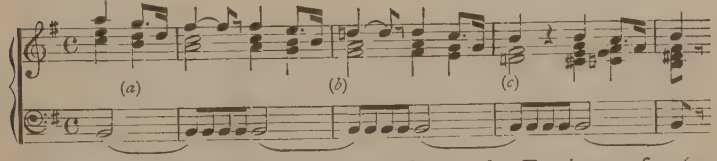


* This rule, like many others, is given for the guidance of the beginner, and should be strictly observed in the early stages of his work. But in modern music it is not unusual to find in the melody the fall of a diminished seventh from submediant to leading-note, as in Ex. 301 (Chapter XII).

Here is a descending series of chords of the sixth over a "pedal bass," that is, a continued dominant (See Chapter XX). At * there is the first inversion of a *major* chord (instead of an augmented triad,) on the mediant.

226. The following interesting passage, which consists, like the last example, of a series of sixths over a dominant pedal, shows the minor seventh of the scale in all the triads of which it forms a part.

Ex. 151. Gounod. Mireille.

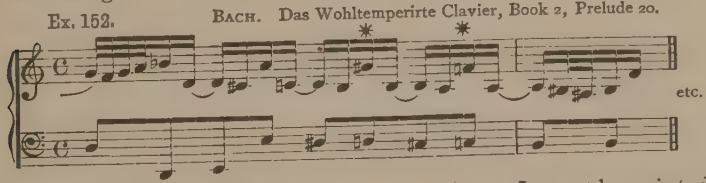


The pedal note, B, here proves the key to be E minor; for (as will be learned later,) only the dominant and tonic can be used as pedals, and if B were a tonic the C and A in the first and third chords would be sharp. At (*a*) the D♮, the minor seventh of the key, is the fifth of the chord; at (*b*) it is the root, and at (*c*) the third. The passage also gives a good example of a descending sequence.

227. As in marking our roots, we consider only the nature of the intervals above them, it is clear that the three chords shown in our last example will be indicated thus:— at (*a*) the chord will be III*b*; at (*b*) it will be ♭VII*b*; at (*c*) it will be v*b* (not V*b*). The ♭VII shows that the usual seventh of the scale (the leading-note) has been lowered a semitone, and, as is seen, now takes a major common chord above it. As the pedal note, B, does not form a note of all, but only of some, of the chords placed above it, it is not reckoned as a note of the chords in marking the roots.

228. All the triads of the minor key can be used in their second inversion; but, as in the major, those of the tonic, subdominant and dominant chords are by far the most common. It is needless to give a complete set of examples, as we did with the major key; but a few of the rarer second inversions will be interesting.

Ex. 152. Bach. Das Wohltemperirte Clavier, Book 2, Prelude 20.



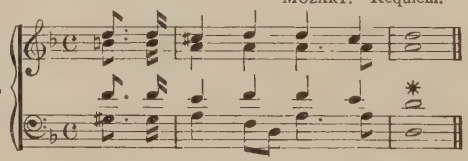
This example will require a little explanation. It must be pointed out that when two or more notes of a chord are taken in arpeggio,

as is so often the case in pianoforte music, the harmony they produce is the same as if they had been sounded together. In this passage the G♯ and B form the chord above D, and the F and A that above C♮, just as if the upper notes were played together as quavers. The chords marked * are therefore the second inversions of the triad on the leading note, and of the common chord on the submediant. It will be seen that the bass of each second inversion moves by step, in conformity to the first rule given in § 189. The D♯ and C♯ in the bass are both *chromatic* notes in the key, and their use will be explained later.

229. In old music it is comparatively rare to find a minor chord at the end of a movement, even when that movement is written in a minor key. The effect of such a close was considered unsatisfactory, and a *major* tonic chord was substituted for a minor to conclude the piece. For some reason which it is impossible to ascertain with certainty, the major third in the final chord of a minor movement was called the TIERCE DE PICARDIE, or "Picardy third." It is still not infrequently employed, especially in church music; and, in this connection *only*, the major third is not considered as a chromatic note in the minor key.* The student will see an excellent example of the employment of this chord in the extract from Bach given in Ex. 145. Occasionally also the third is omitted altogether, and the piece ends with a bare fifth, as in the following examples:

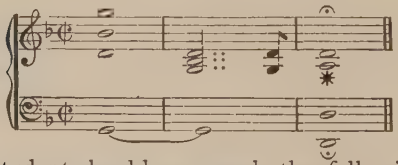
MOZART. Requiem.

Ex. 153.



MENDELSSOHN. Reformation Symphony.

Ex. 154.

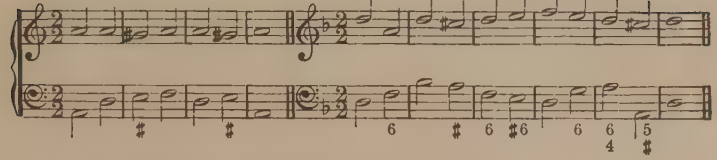


230. The student should now work the following exercises. In setting the basses, we have altogether avoided the "Dorian sixth" (§ 217), and have only used the minor seventh as the bass of a first inversion. We advise the adoption of the same plan in harmonizing the given melodies. Care must be taken to avoid augmented intervals in any voice; these are much more numerous than in a major key.

* The root of this chord must of course be marked I, not i.

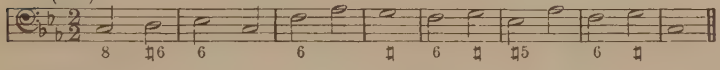
Treble and Bass given. Add Alto and Tenor.

(I) (II)

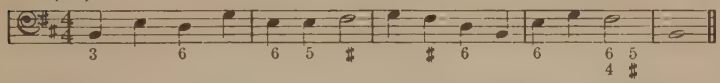


Bass only given. Add three upper parts.

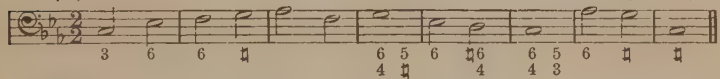
(III)



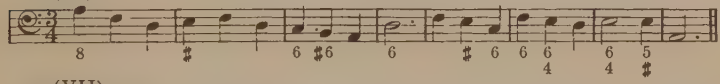
(IV)



(V) (§ 229.)

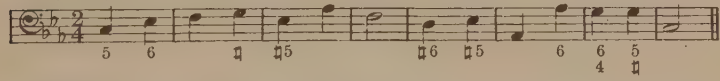


(VI)



(VII)

(VIII)



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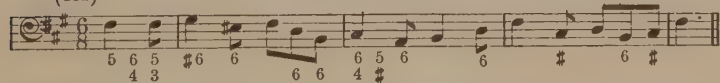
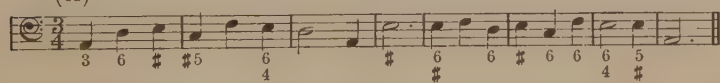


(X)



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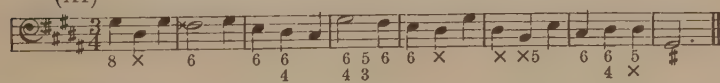
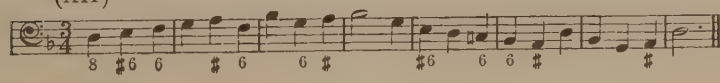


(XII)



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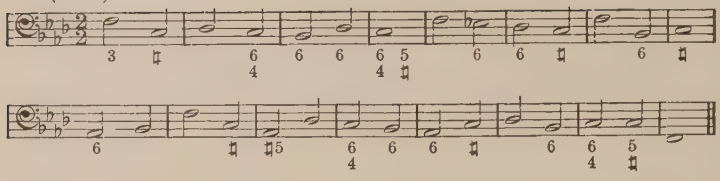

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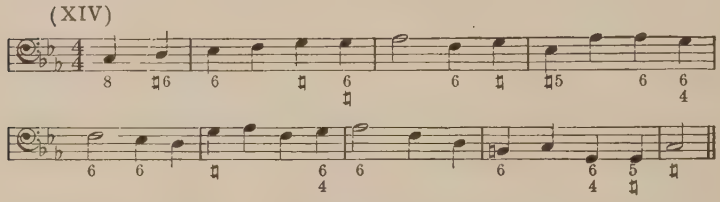
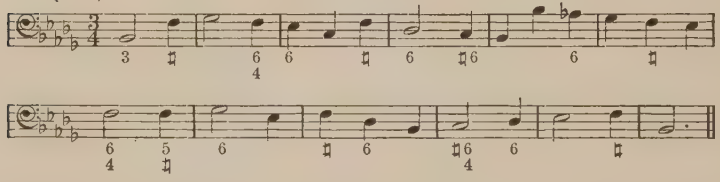
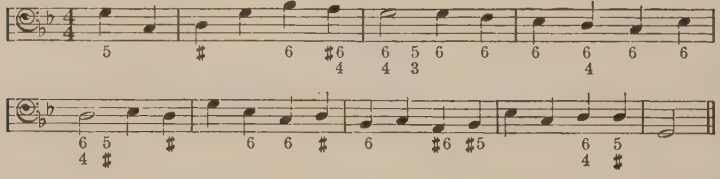


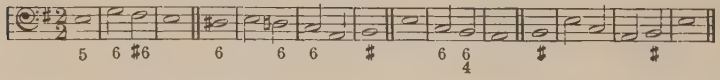
(XV)



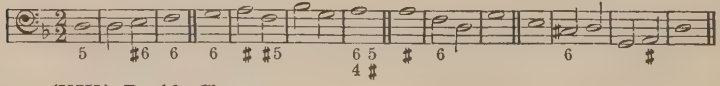
(XVI)



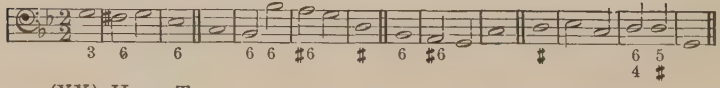
(XVII) Double Chant.



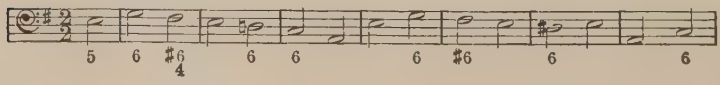
(XVIII) Double Chant.

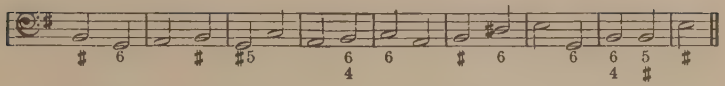


(XIX) Double Chant.

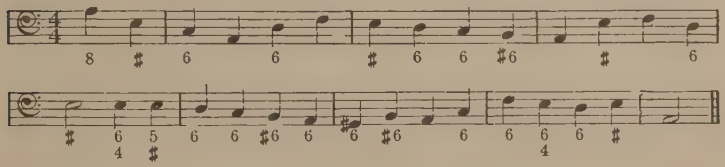


(XX) Hymn Tune.

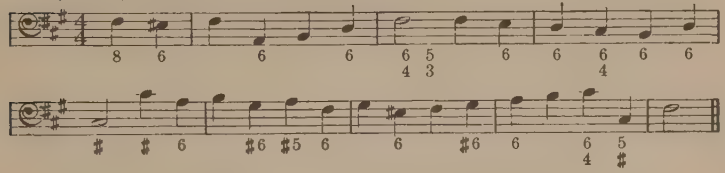




(XXI) Hymn Tune.



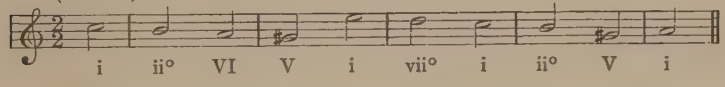
(XXII) Hymn Tune.



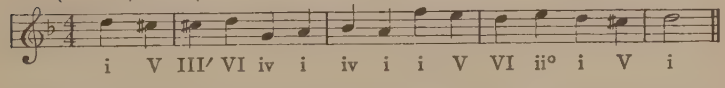
Harmonize the following melodies in four parts.

(In the first two of these exercises, the roots, *but not the positions*, are given.)

(XXIII)

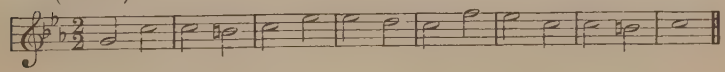


(XXIV)

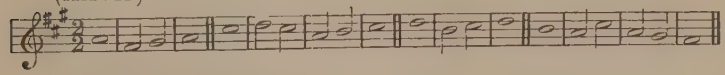


(XXV)

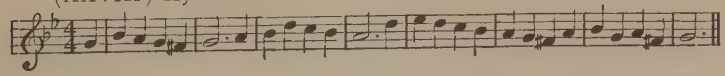
(XXVI)



(XXVII) Double Chant.



(XXVIII) Hymn Tune.

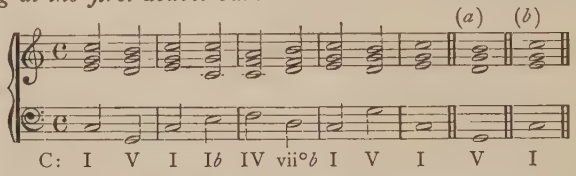


CHAPTER VIII.

THE CHORD OF THE DOMINANT SEVENTH.

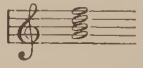
231. If the student will take a simple progression of the diatonic triads with which he is already acquainted, and will observe the mental effect which they produce, he will find that the character of tonic and dominant harmony is quite different. Let him, for instance, play on the piano the following passage, *stopping at the first double bar.*

Ex. 155.



It will be felt that the effect of the alternation of tonic and dominant chords *ending with a tonic chord* is one of completeness; we require nothing to follow. Now let him play the passage again, adding the chord at (*a*). The feeling of finality is gone; one requires something else to succeed; but if (*b*) is played after (*a*), the reposeful feeling is restored. From this it will be seen that the dominant chord of a key is not fitted for concluding a piece, but that, as compared with the tonic chord, its effect is one of incompleteness. In their relation to one another we may say of these two chords what was said (§ 17) of consonance and dissonance—that the tonic chord is a chord of rest, and the dominant a chord of unrest.

232. Hitherto all the chords we have used have been *triads*, that is, combinations of three notes made by placing two thirds one above another. If we place another third on the top of a triad, it is evident that this third will be a seventh from the root. Such a chord will be called a Chord of the Seventh. Of all the possible chords of the seventh, that on the dominant is the most frequently used, and the most important.

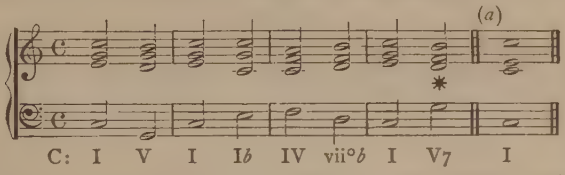


In this chord the dominant is not only the root, but also the generator (§ 36, *note*). It will be necessary as we proceed to consider it in both these aspects. It is very important that the student should thoroughly grasp the fact that the intervals of this chord are *a major third*, *a perfect fifth*, and *a minor seventh* from the generator. We here meet for the first time with a "fundamental discord," that is, a discord composed of the harmonics

of the fundamental tone or *generator.** The upper notes of a fundamental discord are in some cases variable; but every such discord always contains as its thirds next above the generator the notes which make the three intervals just specified. The chord of the seventh is simply figured 7, the fifth and third being implied (as in the common chord) unless one of these notes requires an accidental. In indicating our roots, we add a 7 after and below the V showing the dominant chord, thus— V_7.

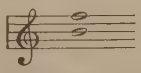
233. If we substitute for one of the dominant chords of the passage in § 231 a chord of the dominant seventh (*)

Ex. 156.

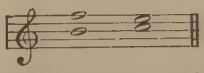


the feeling of unrest which was before to some extent noticeable becomes intensified. It is no longer possible to end on it, because the interval of a seventh is always a dissonance (§ 28), and therefore requires *resolution*—that is, to be followed by a consonance, as at (*a*) above.

234. If we examine the chord of the seventh given in § 232, we shall see that in addition to the seventh from the root there is another dissonance in the chord, namely the diminished fifth between the third and the seventh.



It is this interval which determines the resolution of the discord, that is, the way in which these two notes shall move with regard to one another. The general rule governing the progression is that *two notes forming a diminished interval have a tendency to approach one another*. In the present case the third of the chord, being the leading note, rises a second, and the seventh falls a second.



If the key of the piece were C minor, the seventh would fall a tone, to E♭, instead of only a semitone. But if the chord were taken in a different position, and the seventh were below the third, the interval of the diminished fifth, being now inverted, would become an augmented fourth (§ 30), and *two notes forming an augmented interval have a tendency to diverge*. This will be seen in the treble and alto parts of the last two chords of the

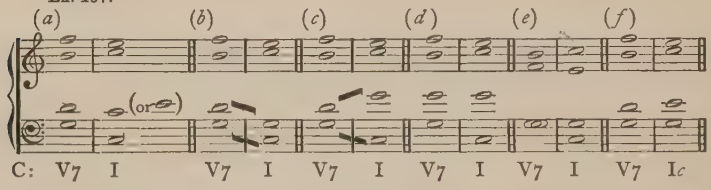
* See Appendix B.

passage in § 233. The important general rule, which the student cannot too thoroughly impress upon his memory, is the following:— *In resolving the chord of the dominant seventh, the third must rise one degree, and the seventh must fall one degree.* The few exceptions to this rule will be explained later in this chapter.

235. The chord of the seventh is very frequently found with all its four notes present; but the fifth is sometimes omitted, and in this case the root is doubled. Neither the third nor the seventh of the chord can be doubled, because the progression of both notes is fixed, and if one of them appear in two voices, we shall either get consecutive octaves or unisons, if both move correctly, or else one of them must move wrongly.

236. Let us now take the chord of the dominant seventh, and resolve it on the tonic chord—its most usual resolution.

Ex. 157.

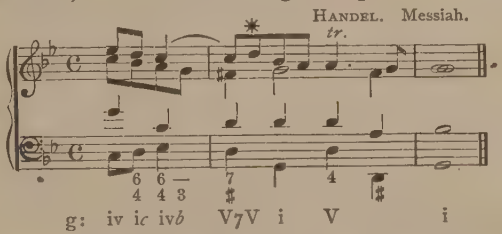


Here the root of the chord, except at (*f*), falls a fifth (or rises a fourth) to the tonic; the third rises a semitone; the seventh falls one degree to the third of the next chord; and the fifth either rises or falls one degree—*see* (*a*). When the root falls a fifth, the fifth in the chord of the seventh cannot go to the fifth of the tonic chord, or we shall have consecutive fifths, either by similar motion, as at (*b*), or by contrary motion, as at (*c*). Hence we get a rule that, *when both chords are in root-position, if the fifth is present in the chord of the dominant seventh, it must be omitted in the following tonic chord.** If it is especially desired to have the fifth in the tonic chord, the root must be doubled and the fifth omitted in the chord of the seventh, as at (*d*) (*e*). In the not infrequent case when the dominant seventh resolves on the *second inversion* of the tonic chord, as at (*f*), the fifth can evidently be present in the chord of the seventh without producing consecutives. Here the rule just given does not apply; the fourth or sixth may also be sometimes doubled. Examples of the ordinary resolution on the root position of the tonic chord will be found at Exs. 39 (*c*), 56, 57, and 115.

* Though, as we have already learned, consecutive fifths by contrary motion are allowed between two primary chords (§ 71,) the student had better, at his present stage, adhere strictly to the rule here given, and omit the fifth in one of the two chords,—it matters not which.

237. It is not uncommon for another note of the chord—either the root or the fifth—to be interposed between the seventh and its resolution, as in the following examples:

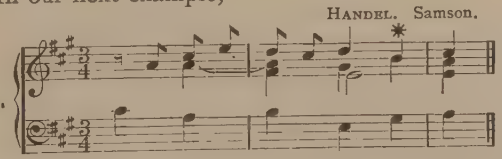
Ex. 158.



Here the seventh rises to the root of its own chord, falling to the third of the tonic chord on the change of harmony. To assist the student, we have both figured the bass, and marked the roots. With regard to the former, it must be said that the $\frac{6}{4}$ in the third quaver is not, as it appears to be a second inversion (ii°*c*); the A in the alto is an accented passing note, as will be explained in Chapter X. Note particularly the figuring of the chord of the dominant seventh at the first chord of the second bar. In a minor key, it is always needful to mark the third of the chord; for the leading-note (as we have learned in the last chapter,) invariably requires an accidental. The 4 at the third crotchet of the same bar is a suspension,—a discord that will be explained in Chapter XI. In indicating the roots, no account is taken of passing notes, or suspensions, these being what are called "unessential discords," that is, notes which are not actually part of the harmony.

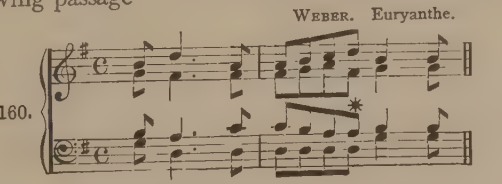
238. In our next example,

Ex. 159.



the seventh falls to the fifth of the chord, which at that moment changes from root-position to first inversion, returning, as in the preceding example, to the tonic chord when the harmony changes. The following passage

Ex. 160.

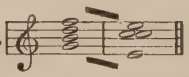


shows at * the same progression of the seventh that we saw in Ex. 158; but it is also instructive, as furnishing an example, in the first two quavers of the second bar, of the resolution of the chord on the *second inversion* of the tonic chord (§ 236); here the sixth of the latter chord is doubled, instead of the bass note.

239. Such resolutions as the above are called "ornamental resolutions" of the seventh. It must particularly be remembered that the voice which had the seventh must *always*, after taking the root or fifth, *proceed to the third of the tonic chord;* otherwise, instead of an ornamental resolution, there is no resolution at all, for a chord of the seventh never resolves on its own root. If the student marks his roots (as we strongly recommend him to do,) before he begins to work his exercises, he can always instantly recognize an ornamental resolution of the seventh by the progression V7–V, which is never met with in any other case.

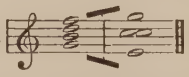
240. An exceptional resolution of the dominant seventh on the *first inversion*, instead of the root-position, of the tonic chord must here be mentioned. Though rarely met with, it is quite possible. If in this case, the seventh fall one degree, as usual, we shall have hidden octaves of a kind that are specially forbidden: (§ 76):

Ex. 161.



Under no circumstances whatever is it allowed for the root and the seventh, in a chord of the dominant seventh, to proceed by similar motion to the same note, or its octave. In this progression, therefore, the seventh must rise, instead of falling, one degree.

Ex. 162.

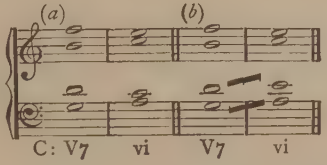


241. Before proceeding to speak of other resolutions of the dominant seventh, it must be pointed out that the great importance of the chord arises from the fact that, when followed by the tonic chord, as in the above examples, it *absolutely defines the key*. Either chord by itself might belong to more than one key; the dominant seventh of C major might be the same chord in C minor; while I in C major could also be IV in G major, or V in F major. But it is evident that the two chords taken together cannot possibly belong to any other key than C major.

242. In addition to the resolution of the dominant seventh on the tonic chord, other resolutions are possible. The most common of these is the resolution on the chord of the *submediant*. In this case the root rises one degree, instead of a fourth, the third and seventh move, as before, by step, the former upwards and the latter downwards; but the fifth, instead of being as before

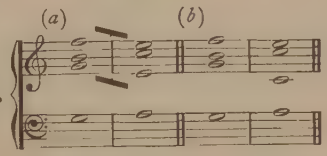
free to rise or fall one degree (§ 236), must fall to the third, as at (*a*), or we shall have consecutive fifths with the root, as at (*b*) below.

Ex. 163.



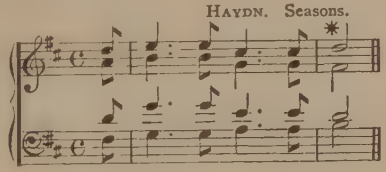
If the fifth of the chord of the seventh be omitted and the root doubled, it will still be bad to double the fifth in the submediant chord, as at (*a*) below; for this gives the worst kind of hidden octaves between treble and tenor—those seen in Ex. 161. It is equally impossible to double the root, for this would make consecutive octaves with the bass. Hence a general rule: *Whenever the dominant seventh is resolved on the submediant chord, the third of the latter chord must be doubled.* This, of course, refers, like our other rules, to four-part harmony. Note that the doubled third of the submediant chord is a primary note of the key.

Ex. 164.



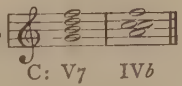
This resolution is of such frequent occurence that we need only give one example of it here.

Ex. 165.



243. Another resolution of the chord of the dominant seventh, less common than the one just noticed, but still not so rare as to be exceptional, is on the first inversion of the chord of the subdominant.

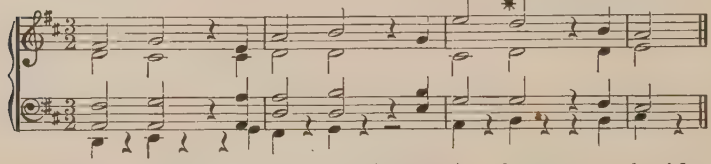
Ex. 166.



Here the seventh, instead of falling, as in the cases hitherto noticed, remains to be the root of the next chord; the third rises by step, as before, the fifth falls one degree, and the root rises one degree to the third of the next chord. The following is a

good example of this resolution:

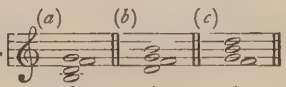
Ex. 167. SCHUMANN. Paradise and the Peri.



244. As a chord of the seventh contains three notes besides the root, it must of course be susceptible of three inversions. Before speaking of the treatment of each inversion separately, we will explain their figuring, and the way in which the roots are to be marked. If the student thoroughly understands the figuring of the various positions of a common chord, those of the dominant seventh will cause him but little difficulty; for this chord is simply a major common chord with an additional third above it. Let the student remember the simple rules for finding the root of a chord given in §§ 174, 175. We already know (§ 232,) that the root-position of a chord of the dominant seventh is figured 7, the full figuring being $\begin{matrix}7\\5\\3\end{matrix}$—*all odd numbers.*

245. Let us now take the three inversions of the same chord, and compare the first two of them with the inversions of a common chord.

Ex. 168.



C: V7*b* V7*c* V7*d*

The first inversion, which has the third in the bass, is the same as the first inversion of the dominant triad, with the seventh added. The first inversion of a triad is figured 6; and we know from Rule II of § 174 that 6 is the root. Evidently the seventh is the note below the root—the inversion of a seventh being a second—and must therefore be figured 5. The first inversion is therefore figured $\begin{matrix}6\\5\end{matrix}$, the 3 being implied, as in the first inversion of a triad.

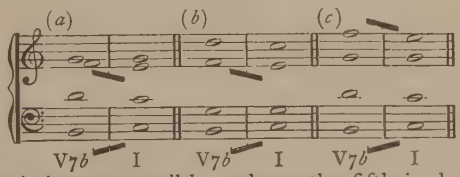
246. By similar reasoning, as the second inversion of a triad is figured $\begin{matrix}6\\4\end{matrix}$, the second inversion of a dominant seventh would be figured $\begin{matrix}6\\4\\3\end{matrix}$. In a major key, however, the 6 is superfluous, and the chord is figured $\begin{matrix}4\\3\end{matrix}$, as above; but in a minor key, as the sixth in this inversion is the leading note, which always requires an

accidental (§ 210), it is needful to give the full figuring. In the key of C minor the chord at Ex. 168 (*b*) would be figured $\sharp\frac{6}{4}_{3}$.

247. If we look at the third inversion, shown in Ex. 168 (*c*), we shall see that the root, third, and fifth are respectively a second, fourth, and sixth above the seventh, which is now in the bass. The full figuring will therefore be $\frac{6}{4}_{2}$; but here, as in the second inversion, the 6 is usually omitted, as unnecessary, and the chord is figured $\frac{4}{2}$. As 4 is the leading note, the figuring in a minor key will be $\sharp\frac{4}{2}$ or $\sharp\frac{4}{2}$, according to the key. In marking the roots, a third inversion is shown by the addition of '*d*' after the numeral, as seen in Ex. 168.

248. In resolving the first inversion, the dissonant notes—the third and seventh of the chord, which in this position are the bass note and the fifth above it—obey the rule given in § 234, the former rising, and the latter falling, one degree. This rule applies, whatever be the position of the chord.

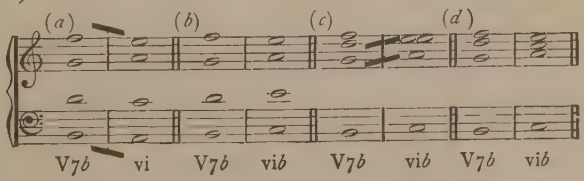
Ex. 169.



Observe that it is now possible to have the fifth in both chords, because they are not both in root-position (§ 236). The root of the V7♭ generally remains as the fifth of I, while the fifth of the first chord can either rise or fall a second.

249. If the first inversion of the dominant seventh resolve upon the submediant chord, the latter must also be in the first inversion, because the leading note in the bass must rise. If it falls, as at (*a*) below, we shall have a diminished fifth followed by a perfect fifth—a progression which is forbidden (§ 73) between the bass and an upper part. The seventh will fall, as before, the root will rise one degree, and the fifth of the chord, *if below the root*, as at (*b*), may either rise or fall one degree, the latter being preferable. But if the fifth be above the root, it must fall, as at (*d*) to avoid consecutive fifths as at (*c*).

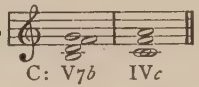
Ex. 170.



This resolution is much rarer than when the chord of the seventh is in its root position.

250. It is seldom that V7*b* resolves on a subdominant chord; if it does, the best position of the latter will be the second inversion:

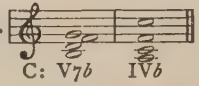
Ex. 171.



C: V7*b* IV*c*

but, as the leading note is now free to fall (§ 101), it is also possible to resolve the chord on the first inversion of the subdominant.

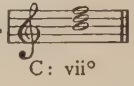
Ex. 172.



C: V7*b* IV*b*

251. If the root of this chord, which it must be remembered is also the generator, be omitted, which in the first inversion rarely happens, we shall have the root position of the diminished triad on the leading note (§ 99.)

Ex. 173.



C: vii°

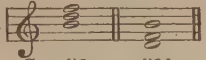
This chord is therefore in reality the chord of the dominant seventh *without the generator;* and here we see for the first time the importance of the distinction between *root* and *generator*, referred to in the foot-note to § 36. The dominant is always the generator of this chord,—that is, the note from which the chord is ultimately derived; but, as it is absent, it can no longer be the *root;* for by "root" is meant the lowest of a series of thirds placed one above another. The root is now the leading note; and the chord is not an inversion, but a *derivative* of the dominant seventh.

252. As the distinction between inversions and derivatives is one of the utmost importance for the proper understanding of many of the chords which we shall meet with later, it is well to put the matter as clearly as possible. We shall see, as we proceed, that all the diatonic discords in every key, whether sevenths, ninths, elevenths, or thirteenths, come from the dominant as their ultimate origin, and their "generator." If the dominant be present in one of the upper parts, we have an *inversion* of the discord; if the lowest note, or notes, of the chord be absent, we have a *derivative;* and in this case the lowest of the thirds that is actually present becomes the root.

253. In marking the roots of derivatives, the ultimate derivation of the chord from its generator should be added in brackets below the root. We have just seen that vii° = V7*b* without the generator; similarly, the much oftener used vii°*b* is, as we shall

see presently, V7*c* without the generator. We therefore mark the roots thus:

Ex. 174.

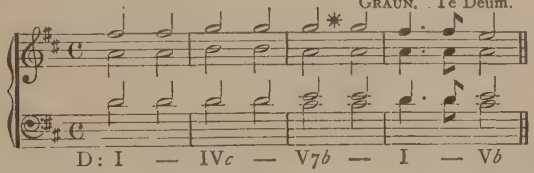


Evidently in the first of these two chords, the only note to double, except in a repetition of a sequence, will be D, because of the fixed progression of the other notes. In vii°*b* as we have already seen in § 168, it is possible to double either D or F—the third or the fifth of the chord.

254. We now give a few examples from the great masters of the use of the first inversion of the dominant seventh, both with and without the generator.

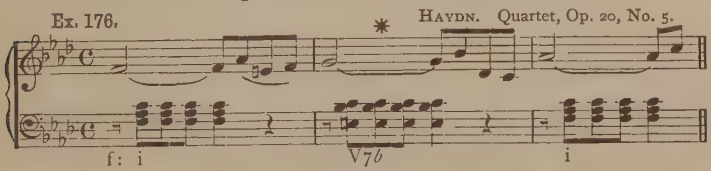
Graun. Te Deum.

Ex. 175.



Here we see the most usual progression of V7*b*, to the root position of I. Our next example is similar, but in a minor key.

Ex. 176. Haydn. Quartet, Op. 20, No. 5.

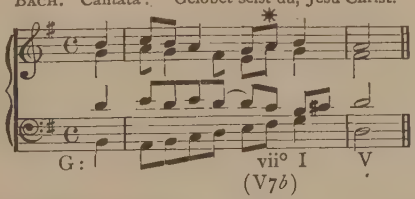


In this passage the E♮ in the first bar and the D in the second are "auxiliary notes" (Chapter X), and do not affect the harmony.

255. We next give two examples of the derivative (vii°,) of this chord.

Bach. Cantata: "Gelobet seist du, Jesu Christ."

Ex. 177.

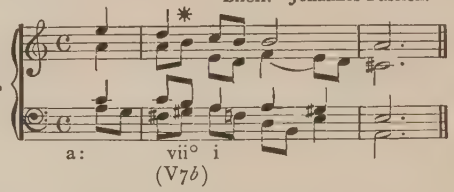


We have not marked the roots in the first part of this extract, because it contains chords which have not been yet treated of, the explanation of which at the present stage would only confuse the student. This is a rather rare instance of the use of vii° in root-position otherwise than in a sequence. Observe that the third of the bass note is doubled (§ 253).

256. In our last example of this chord we again mark the roots of only the two chords particularly under notice, for the same reason as before.

BACH. Johannes Passion.

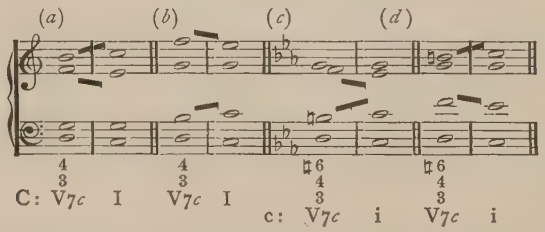
Ex. 178.



The F♯ in the bass at the beginning of the second bar is an example of the "Dorian sixth" spoken of in § 217. Notice also the 'Tierce de Picardie' (§ 229,) in the final chord, and the leading note in the tenor falling to the fifth of that chord, a very common procedure, as already said (§ 100,) with Bach.

257. The second inversion of the dominant seventh (V7*c*,) has the fifth in the bass. The chord and its figuring have already been seen in Ex. 168 (*b*). The rules given in Chapter VI (§§ 188, 189,) for approaching and quitting a second inversion apply to the second inversions of discords as well as of concords, and must be strictly attended to. By far the most usual resolution of this inversion is on the tonic chord.

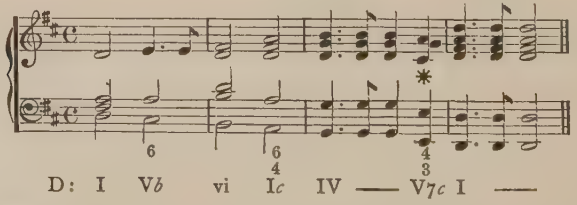
Ex. 179.



We give examples in both a major and a minor key, to remind the student of the difference in the figuring spoken of in § 246. This resolution of the chord is so common that one example will suffice.

MENDELSSOHN. 98th Psalm.

Ex. 180.

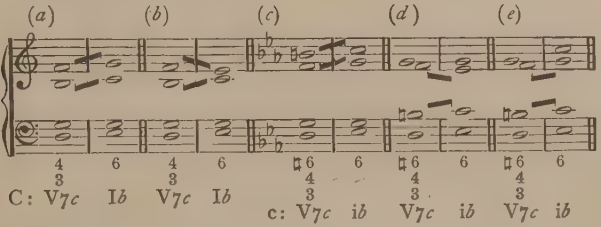


This passage being arranged from the full score, the part-writing is not clearly shown; it must not be supposed that the consecutive

fifths seen in the first and second bars are in the original. The parts cross here. Notice how at * the bass of the second inversion is approached by leap from the root-position of another chord, and moves by step to the next chord.

258. If this inversion resolve on the *first inversion* of the tonic chord (I*b*), instead of on the root position, the seventh may *either rise or fall one degree.*

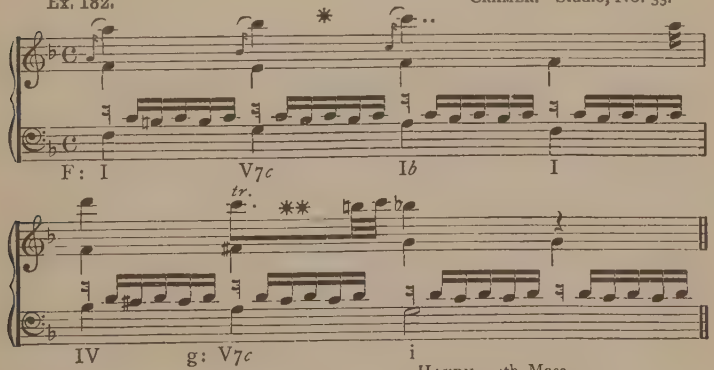
Ex. 181.



At (*a*) and (*c*) the seventh rises to the fifth of the tonic chord; at (*b*) it falls to the third. The consecutive fifths at (*a*) are allowed (§ 73). In such positions it is usually better for the seventh to rise, because thereby a primary note is doubled in the tonic chord. But in the position (*d*), where the seventh is a second below the root, it must fall (§ 81). It would, however, be *possible* here for the seventh to rise, if the root leapt away to the root of the next chord, as at (*e*).

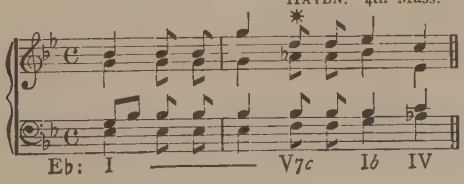
259. The following examples will illustrate the above resolution:

Ex. 182. Cramer. Studio, No. 33.

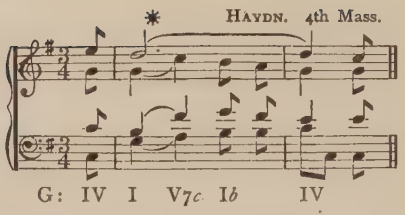


Haydn. 4th Mass.

Ex. 183.



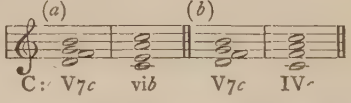
Ex. 184.



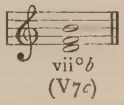
After the explanations already given, it is only needful to add that in the second bar of Ex. 182 there is a modulation from F to G minor, and that in the third chord from the end in Ex. 184, the A and F in the alto and tenor are passing notes. Before proceeding, it may not be superfluous to remind the student that, in this inversion of a dominant seventh, the seventh is only allowed to rise when the following tonic chord is in its first inversion, *not* when it is in root position.*

260. It is rare for the second inversion to resolve on either a submediant or a subdominant chord. If it does so, it is evident that, as the bass of V7*c* can only move by step, the following chord will be inverted.

Ex. 185.

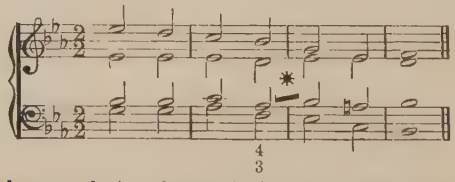


261. If the generator be omitted in this inversion, we have our old acquaintance vii°*b*.



In consequence of the absence of the generator, the chord in this position is now no longer a second, but a first inversion, and the bass, though it still most frequently moves by step, is also free to leap, as in the following passage from one of Bach's

* In a well-known passage in Dr. Dykes's tune 'Hollingside,' is seen the following:

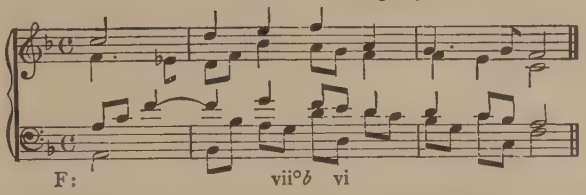


Here, in V7*c*, the seventh rises though the bass falls. This is because the root in the treble falls to G, the resolution of the seventh, a somewhat analogous case to that seen in § 240. The progression is exceptional, and had better not be imitated by the student.

chorals:

Bach. "O Ewigkeit, du Donnerwort."

Ex. 186.

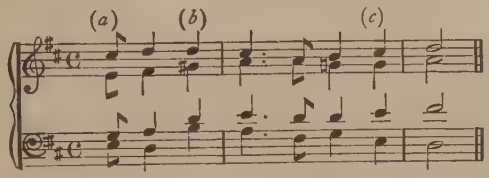


Besides this liberty, the third (the original seventh), is also now free to rise, as well as to fall, as we saw in Ex. 181; it is also frequently doubled, one of the notes rising and the other falling. The leading note, (now the root,) can of course not be doubled.

262. The employment of V7*c* is extremely rare with Handel, who almost always omits the generator, as in the following familiar passage from the "Hallelujah" chorus.

Handel. Messiah.

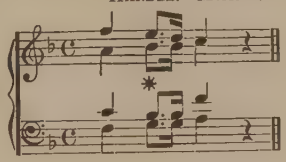
Ex. 187.



This short extract contains three derivatives of the second inversion. At (*a*) and (*c*) the bass is doubled, and the third rises in each case. At (*b*) the third is doubled, one rising and the other falling. One of the thirds may also leap to another note of the next chord, as in the following. The D here is only a passing note, and does not change the harmony.

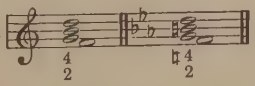
Handel. Messiah.

Ex. 188.



263. The third, and last inversion of the dominant seventh has the seventh in the bass.

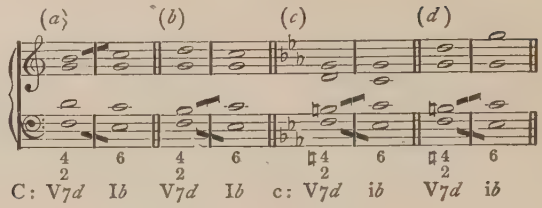
Ex. 189.



In resolving this chord the seventh (the bass note), must fall one degree, and the leading note (the fourth above the bass), must rise to the tonic. By far the most frequent resolution is

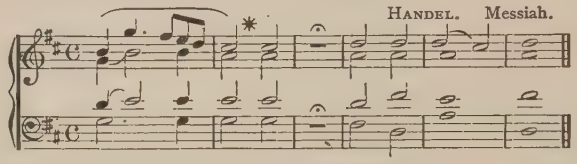
on the first inversion of the tonic chord:

Ex. 190.



The following passage shows this resolution:

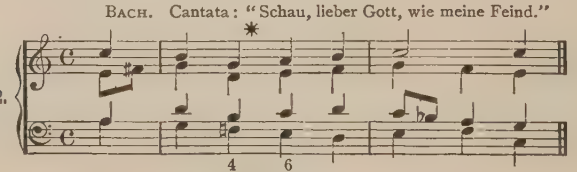
Ex. 191.



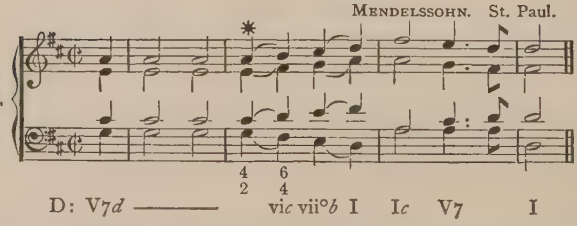
The only point requiring notice here is, that a rest is introduced between the discord and its resolution. It must be remembered that during a rest the mental effect of the last preceding harmony always continues; if this harmony be, as here, a discord, it must be resolved in the chord following the rest.

264. Another, though much rarer, resolution of V7*d* is seen in our next examples.

Ex. 192.



Ex. 193.



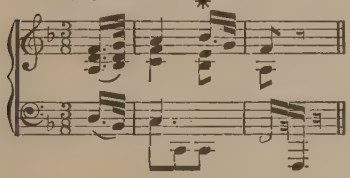
Here the chord is resolved on the rare second inversion of vi—a secondary triad, which proceeds to vii°*b*. The only satisfactory position for this progression is that seen in these two passages; in V7*d*, *the root must be in the upper part*, and must of course move in contrary motion to the bass. The contrary motion must also continue to the following chord, vii°*b*, all the parts

moving by step. The chord vi*c* has here the character of a "passing chord" (See Chapter X.). The progression we are discussing (V7*d*, vi*c*, vii°*b*), is never found in a minor key.

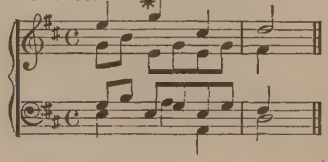
265. It is very rare in four-part harmony to meet with the derivative of this inversion, which, the student will see, is vii°*c*. An example of this chord has been given in Ex. 122.

266. A very important point to be noticed with regard to the treatment of fundamental discords is that the dissonant notes may be transferred from one part of the harmony to another, provided that they are properly resolved in the part in which they last appear. In this case the seventh is not infrequently doubled even when the generator is present, one of the sevenths leaping to another note of the chord, and the other receiving its regular resolution. (*See* Exs. 194, 195 below.) But it is best when one of the dissonant notes (the third or the seventh) has been transferred to the *bass*, not to change its position again, but to resolve it in that voice, as at (Exs. 196, 197) below. (See also in illustration of this the first bar of the extract from Schumann in Ex. 167.)

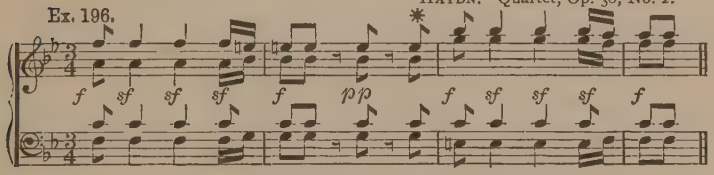
Ex. 194. Beethoven. Andante in F.



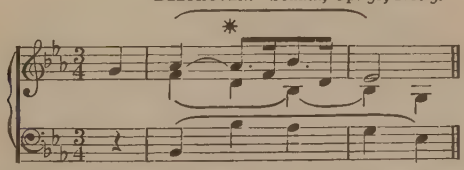
Ex. 195. Beethoven. Symphony in D.



Ex. 196. Haydn. Quartet, Op. 30, No. 2.



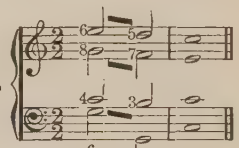
Ex. 197. Beethoven. Sonata, Op. 30, No. 3.



This change in the position must not be confounded with the ornamental resolution of the seventh described in §§ 237–239. There the seventh disappears before the harmony changes; here it is simply transferred from its original position to another voice.

267. In a full cadence the root-position of the dominant seventh is very nearly, if not quite, as often employed as the dominant triad (V), to precede the final tonic chord. If it be itself preceded by I*c*—one of the commonest forms of cadence—beginners are apt to write the progression clumsily. It was said in § 182 that when $\frac{6}{4}$ is followed by $\frac{5}{3}$, the 6 should go to 5, and the four to 3. If instead of $\frac{5}{3}$ we have 7, *the same rule should be observed*, and the *octave of the bass in the* $\frac{6}{4}$ *chord should go to* 7.

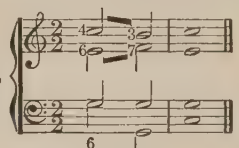
Ex. 198.



C: I*c* V7 I

But if the 4 be in the upper part, it is possible for 6 to rise to 7, thus omitting the fifth in V7, and having it instead in I (§ 236).

Ex. 199.



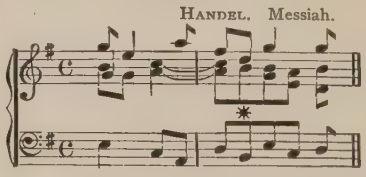
C: I*c* V7 I

If the 4 rise to 5 (as in Ex. 117), the octave should fall to 7, as in Ex. 198 above.

268. A few exceptional resolutions of the chord of the dominant seventh are to be found, especially in the works of Handel. One of these, in which the chord is followed by a chord of the seventh on the subdominant, has been already noticed (§ 80) and examples given of it. We add a few others here not as models for the student's imitation, but for the sake of completeness.

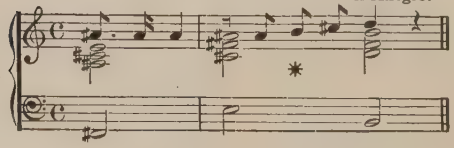
HANDEL. Messiah.

Ex. 200.



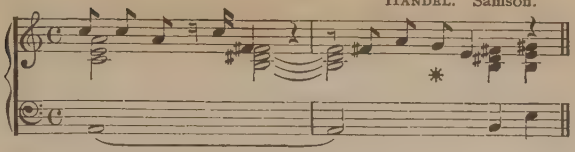
HANDEL. L'Allegro.

Ex. 201.



Handel. Samson.

Ex. 202.

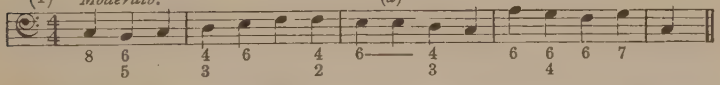


At Ex. 200 the mediant chord, with the fifth omitted, is interposed between the chord of the seventh and its regular resolution on the submediant. This may be regarded as akin to the ornamental resolutions spoken of in § 239. At Ex. 201 the third inversion of the seventh is resolved on the root position of the tonic chord instead of on its first inversion; and at Ex. 202 the seventh is irregularly resolved by rising to the root. The last two progressions are rarely if ever met with excepting in the accompaniment of recitative.

269. As we are at present treating only of diatonic chords, we defer till later the explanation of the various chromatic resolutions of the dominant seventh, in which the seventh rises a chromatic semitone, or the third falls the same interval. Some of these progressions will be dealt with when, in the next chapter, we have to speak of modulation; others will be more suitably examined in connection with the chromatic chords of a key.

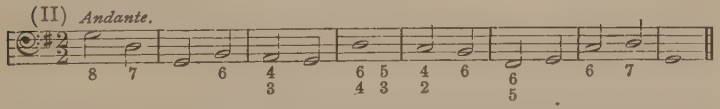
[We shall in future give only the bass of the exercises, as the student should by this time have gained sufficient experience to enable him to dispense with the additional aid afforded by our giving the treble also. As the exercises are now the basses of short pieces of music, time indications are added, to assist the student in understanding the character of the music intended.]

(I) *Moderato.* (*a*)

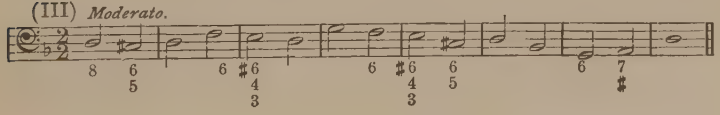


(*a*) A line placed under a bass note signifies that the harmony of the preceding bass note is to be continued or repeated.

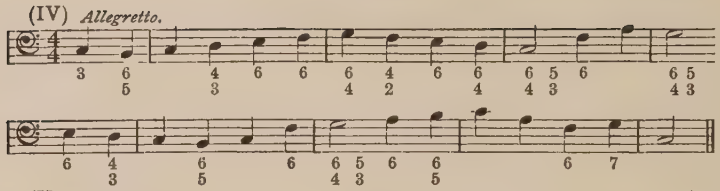
(II) *Andante.*



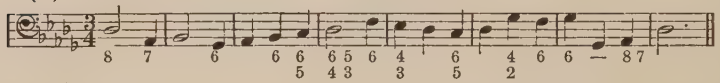
(III) *Moderato.*



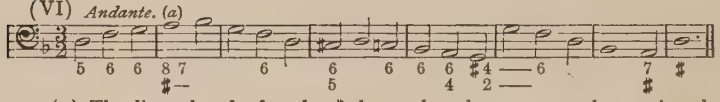
(IV) *Allegretto.*



(V) *Andantino.*

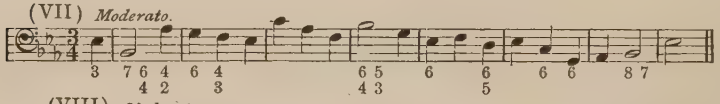


(VI) *Andante.* (*a*)

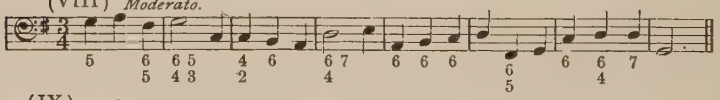


(*a*) The line placed after the ♯ shows that the note must be continued. Here C♯ must be a semibreve, while A and G (8 and 7,) are minims. The lines under the first note of bar 6 have the same meaning as that at (*a*) in Exercise I.

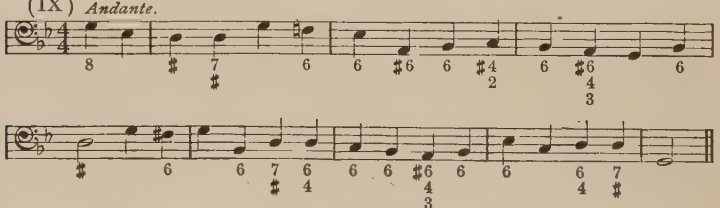
(VII) *Moderato.*



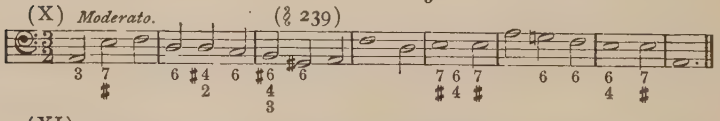
(VIII) *Moderato.*



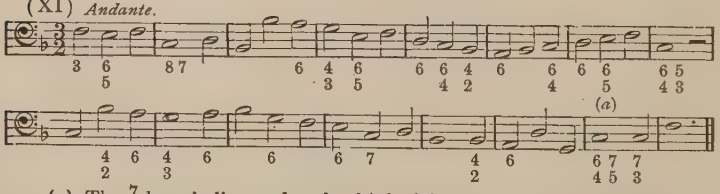
(IX) *Andante.*



(X) *Moderato.* (𝄵 239)

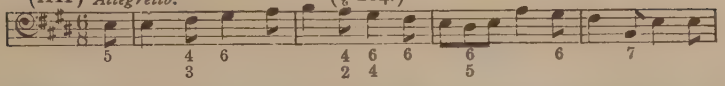


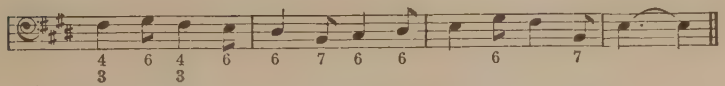
(XI) *Andante.*



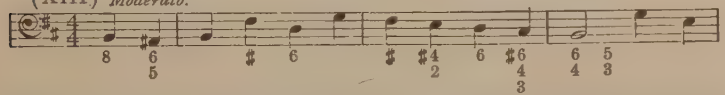
(*a*) The $\frac{7}{5}$ here indicates that the third of the chord is to be omitted and the root doubled. The third is added in the following beat.

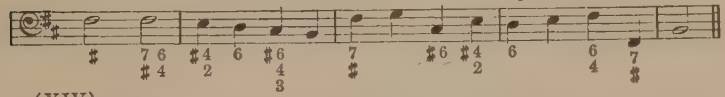
(XII) *Allegretto.* (𝄞 264.)



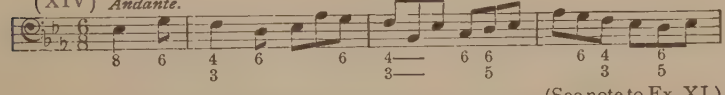


(XIII) *Moderato.*

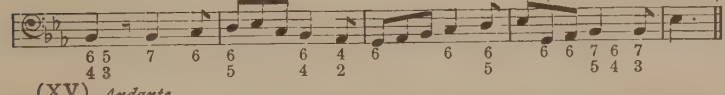




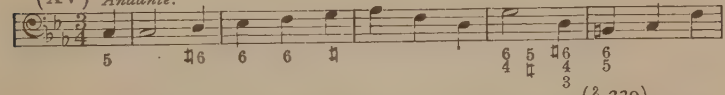
(XIV) *Andante.*



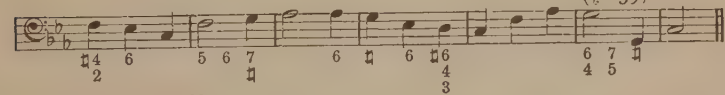
(See note to Ex. XI.)



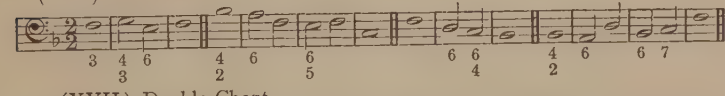
(XV) *Andante.*



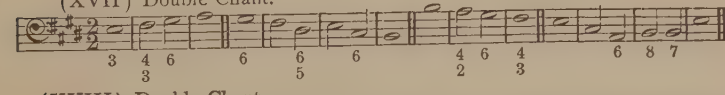
(𝄞 239)



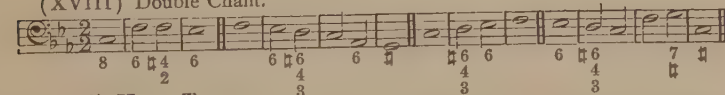
(XVI) Double Chant.



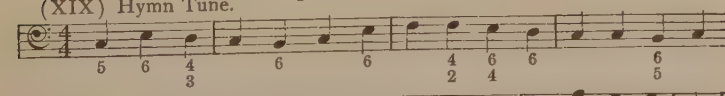
(XVII) Double Chant.

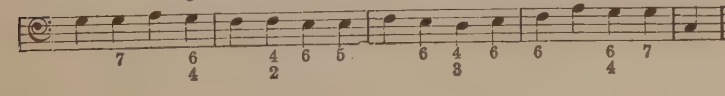


(XVIII) Double Chant.

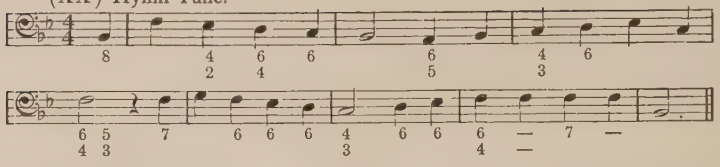


(XIX) Hymn Tune.

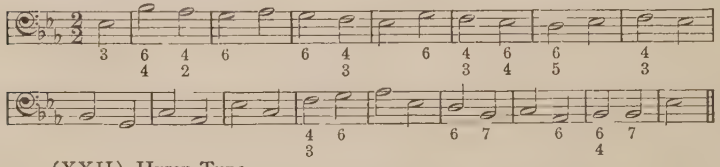




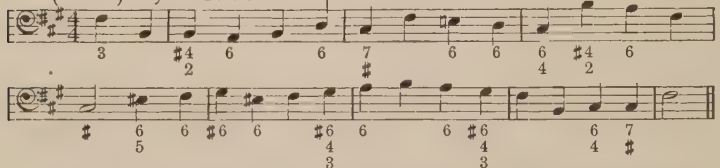
(XX) Hymn Tune.



(XXI) Hymn Tune.



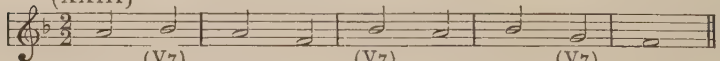
(XXII) Hymn Tune.



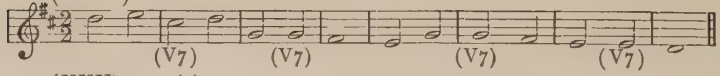
Add Alto, Tenor, and Bass below the following melodies. Figure the basses, and mark the roots.

[N. B.—In the first three of these melodies, the places for the suitable introduction of the chord of the dominant seventh are indicated by (V7) under the note; but the *position* of the chord is left to the pupil in every case.]

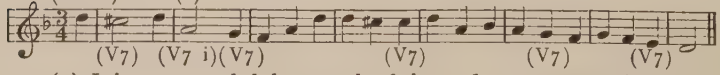
(XXIII)



(XXIV)

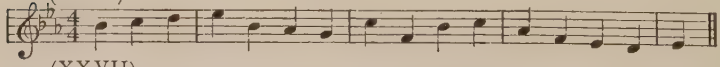


(XXV)

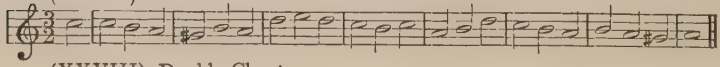


(*a*) It is recommended that two chords be used to accompany this note.

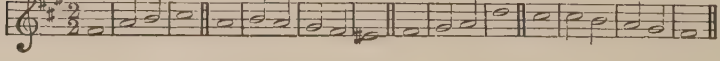
(XXVI)



(XXVII)



(XXVIII) Double Chant.



CHAPTER IX.

KEY RELATIONSHIP—MODULATION TO NEARLY RELATED KEYS—FALSE RELATION.

270. If all music remained in one key the resources at the disposal of the composer would be very limited, and the effect would soon become extremely monotonous. In all pieces therefore of more than a few bars' length, changes of key are introduced, a new note being taken as the tonic for a time, and a return being subsequently made to the original key. Every movement should end with the same note as a tonic with which it begins, though the *mode* of the key may be, and often is, changed from major to minor, or *vice versa*.* A change of key is called a Modulation. If the modulation be the shortest possible, and consist of only two chords, it is called a Transition. This word is used by some writers to designate a modulation to a remote, or unrelated key; but it is better to employ it, as we shall do throughout this volume, to indicate a momentary, or "transient" modulation.

271. The first question to be answered is, which keys are the best to modulate into, and why do some modulations sound more natural than others? The answer to this question depends on what is known as *Key Relationship*, which we shall now proceed to explain.

272. Two major keys are said to be related to one another when their tonics are consonant; if the consonance be perfect, the relationship is nearer than if it be imperfect. The only perfect consonances, besides the unison and octave, which evidently will not change the tonic, are the perfect fifth, and the perfect fourth, the inversion of which gives the perfect fifth. Thus, F and G are both perfect fifths from C, the former below and the latter above. These therefore are the nearest related major keys to C. The imperfect consonances, the major and minor thirds and sixths, are also related, but more distantly: they stand in the second degree of relationship. For the present we deal only with the most nearly related keys.

* Occasionally, in pieces containing more than one movement, the last will be in a different key from the first, as, for example, in Weber's Overture to "Preciosa," in which the introduction is in A minor, and the succeeding *allegro* in C major. Such cases are exceptional and irregular, and should not be imitated by the student.

273. Two keys whose tonics are dissonant with one another are said to be unrelated; and if the tonics are a semitone apart, or are distant an augmented or diminished interval from each other, such keys are often spoken of as "remote." Modulation to unrelated or remote keys will be dealt with later.

274. If we examine two nearly related major keys (*e.g.*, C and G, or C and F), we shall see that, excepting in one note, their diatonic scales are identical. Thus, the only note which differs in the scales of C and G is F, and in the scales of C and F, B (§§ 47, 51). Therefore every common chord in the key of C which does not contain the note F also belongs to the key of G; and every chord in the key of C which does not contain B belongs also to F. An examination of the table of the triads of C given in Ex. 62 will show us that there are four chords common to the keys of C and G, and that there are also four common to the keys of C and F.

275. If we now compare the major scale of C in Ex. 6 with the harmonic form of the relative minor (A minor) given in Ex. 138, we shall see that here also (as said in § 210) all the notes of the scale are identical with one exception—G. The key of A minor therefore, like G and F, contains four chords in common with the key of C; and for this reason (though none of its chords, even though they look identical, are derived from the same generators) a relative minor key is considered to be one of the nearly related keys to its relative major. Similarly, the relative minors of the dominant and subdominant keys, being so closely connected with their own relative majors, are regarded as among the nearly related keys to the tonic. We thus obtain the following table of nearly related keys, in which we place the sharper keys to the right and the flatter to the left of the tonic.

Table of nearly related keys.

F major.	C MAJOR.	G major.
D minor.	A minor.	E minor.

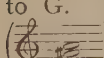
276. If we take any minor key as a starting point, we shall get a similar series; but with this difference, that nearly related minor keys have fewer notes, and therefore fewer chords, in common, than nearly related major keys. But the relations of their tonics to one another will be similar; and the nearly related keys to A minor will therefore be:

D minor	A MINOR	E minor.
F major.	C major.	G major.

Putting the matter concisely and as a general rule, it may be said, that, *the nearest related keys to any major key are its dominant and subdominant, and the relative minors of these three keys*;

and the nearest related keys to any minor key are its dominant and subdominant minors, and the relative majors of these three keys.

277. It should be noticed that two keys which are nearly related to one another never differ in their signature by more than one sharp or flat. For this reason tonic major and minor keys (§ 212), in spite of their close harmonic connection, are not considered to be nearly related, but are included among keys in the second degree of relationship.

278. A modulation to a nearly related key is effected by introducing a chord containing a note belonging to the new key, but foreign to that which we are leaving, and by following that chord by other chords defining and fixing the new key. This last condition is essential, because *no single chord can ever define a key*. Suppose, for instance, that we wish to modulate from C to G. Naturally we think of using the chord of D major (), as being the dominant chord of the new key. But the introduction of this chord alone is quite insufficient; for the same chord may also be the dominant of G minor, the tonic of D major, the subdominant of A major, or the submediant of F♯ minor; and it would be quite possible to follow it by harmony in any of these keys. If we take the dominant 7th on D (adding C♮ to the above chord), we restrict our choice considerably; but this chord may still be either in G minor or G major, and only the context will show us which. To determine any key, at least two chords, and sometimes more, must be regarded in their relation to one another.

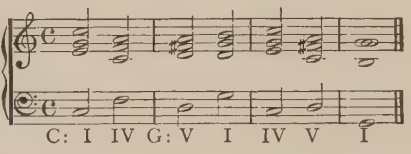
279. It was said in § 163 that a common chord in its root position was not figured unless one of the notes required an accidental. In the case of a modulation without a change of key-signature, it would be needful to indicate the alteration of the third in the chord of the new dominant. Supposing the key of the piece to be C, and we are modulating to G by means of the chord of D major, as in the last paragraph, the D in the bass would be figured thus . (For the explanation of the ♯ without a figure at the side of it, see § 164.) If the modulation were effected by means of the dominant seventh of the new key, the bass note would be figured . Similarly, if the modulation were to F major, it would be necessary to indicate the ♭ to the B in the figuring, and so in other cases.

280. A modulation can either be effected immediately—that is to say by introducing a characteristic chord of the new key directly after a chord characteristic of that which we are leaving—or it can be effected gradually—that is by interposing

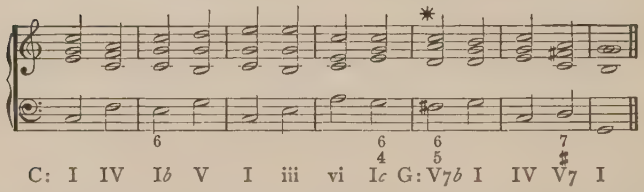
between the characteristic chords of the two keys chords which are common to both. The larger the number of ambiguous chords (that is chords which belong to both keys, and therefore leave the tonality doubtful) introduced, the more gradual will be the modulation. Let the student compare the following passages:

Ex. 203.

(*a*)



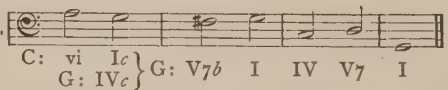
(*b*)



The first bar and the last two of each passage are identical; but at (*a*) the chord containing F♯ follows immediately on one containing F♮, while at (*b*) six ambiguous chords, belonging to both the keys of C and G, are seen before the new key is introduced at ✳. The effect of the latter modulation is therefore smoother than that of the former.

281. It will be seen that in marking the roots in the above example, the six ambiguous chords are all indicated as in the key of C, though they might also be regarded in their relation to G. This is because a key once established can only be disestablished by the introduction of a note or notes foreign to itself. If it be thought desirable to mark the exact point of contact, so to speak of the two keys, the roots in the last four bars might have been indicated thus:

Ex. 204.



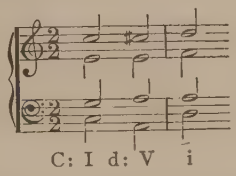
The student should observe where these ambiguous chords occur; but it would needlessly complicate the analysis to mark them for such a simple harmonic progression as that here shown.

282. It must not be forgotten that every modulation, except between tonic major and minor keys, changes at least one of the primary notes; in considering which notes are best to double, the student must notice in what key the music is at the moment.

283. In modulating from a major key to the supertonic minor it is necessary to avoid putting the dominant chords of the two keys too near one another. This is because the dominant of the

first key is the subdominant of the second, and its chord would be a *major* chord on the subdominant of the minor key. If these two chords come next to one another we shall have the very unpleasant progression shown in Ex. 146. It is therefore usually advisable in making this modulation to introduce the minor sixth of the new key before introducing its leading note. This rule, however, does not apply when the tonic chord of the major key is immediately followed by the dominant chord of the minor.

Ex. 205.



C: I d: V i

Here we have no chord common to both keys, but only a note *common to a chord in both keys*. This is a case of frequent occurrence.

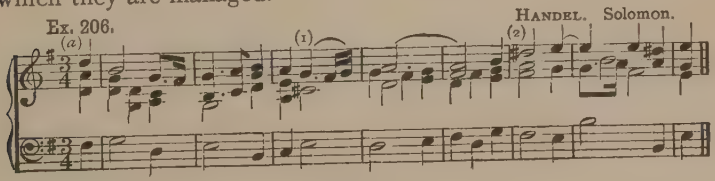
284. If we compare any minor key with the minor keys of its dominant and subdominant, it will be seen that of all the diatonic triads there is only one in common to each pair of keys. For instance, the only chord common to C minor and G minor is the tonic chord of the former, while the only chord common to C minor and F minor is the tonic chord of the latter. For this reason, while the most frequent modulations for a major key are to the other nearly related major keys, a minor key most often modulates to one of the related major keys, either its relative major, with which it has four chords in common, or its submediant major (the relative major of its subdominant), with which it has three.

285. The number of chords common to two nearly related keys is largely increased by the addition of chromatic chords, which will be treated of in subsequent chapters. But even without using these, considerable variety is possible, since the diatonic chords can be employed in their inversions as well as in their root positions.

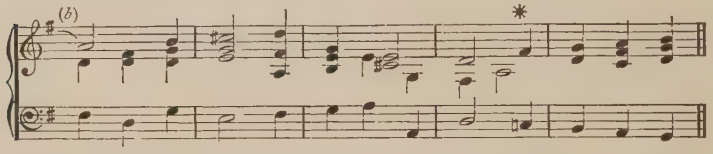
286. We shall now give some examples, from the works of the great masters, of modulation into nearly related keys, with such remarks as may help the student to understand the way in which they are managed.

Ex. 206.

HANDEL. Solomon.



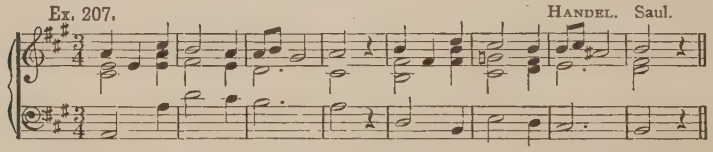
This passage shows us at (1) a modulation to the dominant effected abruptly, by introducing C♯ immediately after C♮. From D the music modulates to E minor at (2) by taking the first inversion of the chord of E minor as the supertonic of D, and leaving it as the tonic of the new key, following it by a cadence in E minor, with the chord of the dominant seventh fixing the key (§ 241). On the repetition of the phrase, the passage is varied from the fifth bar as at (*b*).



The music now remains in D, coming to a full close in that key, and the return to G is made by flattening the leading note of D at * and thus making it the subdominant of G (§ 86).

287. The following extract illustrates what was said in § 283 with regard to the modulation to the supertonic minor key.

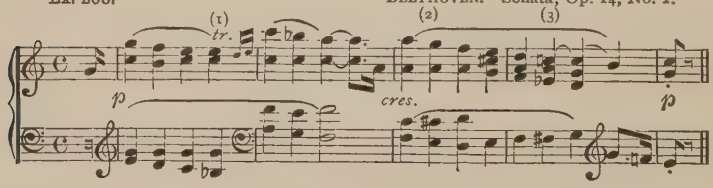
Ex. 207. HANDEL. Saul.



Here the modulation is effected by taking at the fifth bar the supertonic chord of A and leaving it as the tonic chord of B minor. Let it be noticed that G♮, the minor sixth of the new key, is introduced before A♯, its leading note (§ 283).

288. In the passage now to be given we find some other modulations.

Ex. 208. BEETHOVEN. Sonata, Op. 14, No. 2.

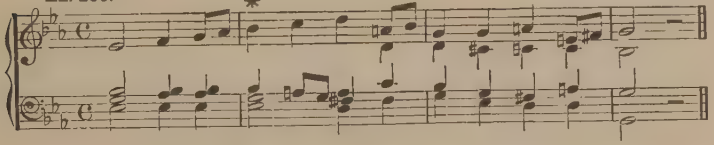


At (1) is a modulation to the key of F, the subdominant, by flattening the leading note of the key of C. At (2) the dominant of F is sharpened to become the leading note of its relative minor. From D minor the music returns to C at (3) by taking the first chord of the bar as the tonic of D minor and leaving it as the supertonic of C, thus reversing the process shown in Ex.

207. The second chord of this bar is a chromatic chord in the key of C, which will be explained later.

289. A modulation from a major key to its mediant minor is usually made by treating the tonic chord of the first key as the submediant chord of the second, and following it accordingly, as below.

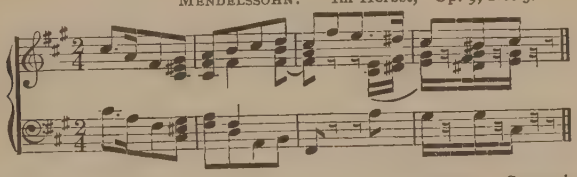
Ex. 209. AUBER. Masaniello.



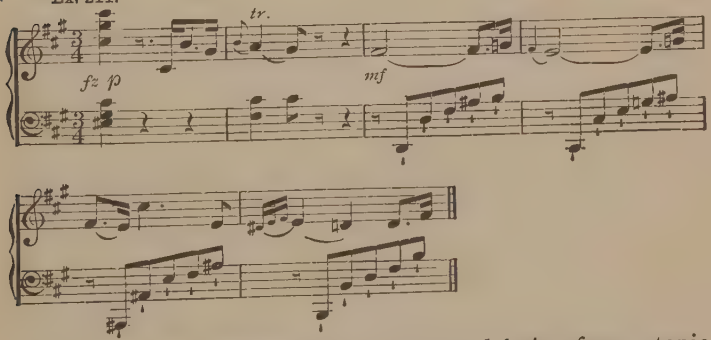
290. Our next illustrations show modulations from a minor tonic to the dominant minor (Ex. 210) and the subdominant minor (Ex. 211). The key is changed in each case at the third bar of the extract; at 210 by treating the previous tonic as a subdominant; and at 211 by the reverse process, the first inversion of the subdominant being here left as the first inversion of the new tonic. It should be mentioned that the A♯ in the third bar of Ex. 211 is not a harmony note, but an auxiliary note. (See Chapter X.)

MENDELSSOHN. "Im Herbst," Op. 9, No. 5.

Ex. 210.



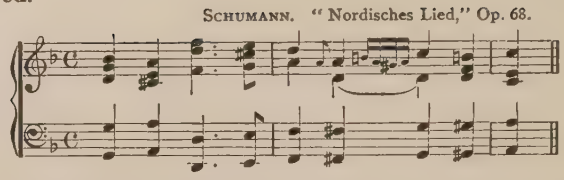
Ex. 211. HAYDN. Sonata in A.



291. Our last example will show a modulation from a tonic minor to the relative major of its dominant minor—in this case from D minor to C major. This modulation is not very common, and in the present instance C major is quitted as soon as it

is entered.

Ex. 212.

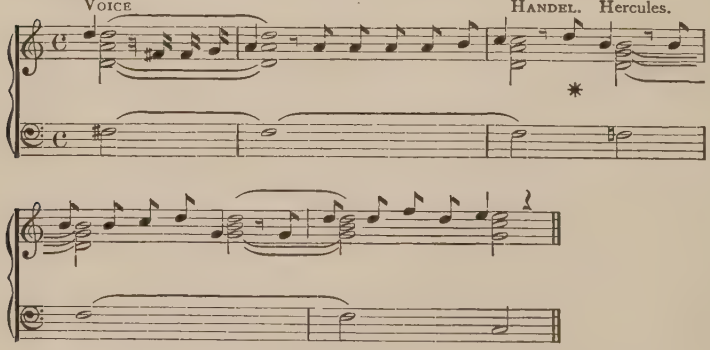


The first chord of the second bar is taken as the tonic of D minor and quitted as supertonic of C major. The second chord is a chromatic chord in the key of C, which will be spoken of in a later chapter; the third chord is part of the dominant eleventh of C, with which the student is not yet acquainted, and at the last chord of the bar, the music modulates to A minor.

292. The general rule for modulating to a nearly related key which may be gathered from the examination of the extracts we have given is, that the modulation may be effected either by immediately altering one of the notes of the key we are leaving by means of an accidental, as in Exs. 206, 208, or by taking a chord common to both keys, and leaving it as a constituent of the new key, as in Exs. 207, 209, 210, 211, 212. All nearly related keys contain at least one chord in common.

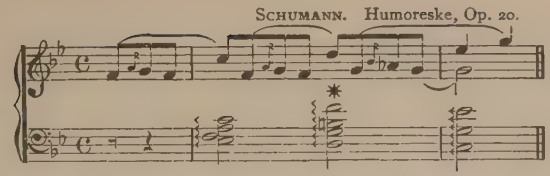
293. Another method of modulating consists of irregularly resolving the chord of the dominant seventh by making its third rise a tone, or fall a semitone or a tone, or its seventh rise a semitone. An example of each procedure will make this clear.

Ex. 213.



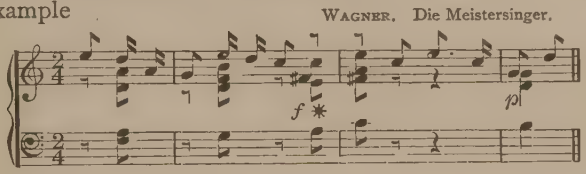
At * the third of the dominant seventh in G falls a chromatic semitone to the seventh of the dominant seventh in the subdominant key, which is followed by the tonic chord, to establish the key. The irregular progression of the bass in the last two chords was spoken of in the last chapter (§ 268).

Ex. 214.



Here the third in the chord of the dominant seventh in B flat rises a tone to the third of the same chord in C minor, and the modulation is confirmed by the tonic chord of that key. In our next example

Ex. 215.



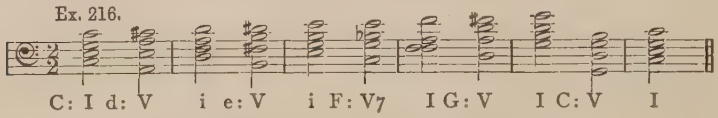
the seventh in the chord of the dominant seventh of C rises a chromatic semitone, and becomes the leading note of the key of G, to which a modulation is made. The chord marked ✱ is a dominant ninth in G, a chord which will be treated of later.

294. There is yet one more point to be considered in the choice of modulations. As a general rule, a modulation to the dominant side of the tonic—that is, to a key containing more sharps, or fewer flats—is to be preferred, as a first modulation, to one to the subdominant side—that is, a key having more flats, or fewer sharps. The reason of this is that the dominant is a subordinate key compared to the tonic, as also are all other keys with more sharps than itself. When, therefore, we modulate into one of these keys, the tonic still maintains its position as the source whence the whole music springs. But the tonic itself is a subordinate note in keys having more flats than itself —*e.g.* C is the dominant of F, and the mediant of A ♭; and when we modulate into one of these keys the original tonic sinks into a secondary position. If, for instance, we modulate from C to F and make a long stay in the latter key, we shall when we return to C most likely get the mental impression, not of returning to the key of the tonic, but of going into a dominant key. For this reason the feeling of the key is much more readily disturbed and much sooner obliterated by a modulation to the flat side of the key than to the sharp side This applies chiefly to major keys; in minor keys, owing to their more artificial origin, greater freedom prevails, and the same disturbing effect is not so readily produced.

295. In § 270 a Transition was defined as a passing modulation, consisting of not more than two chords. Some of the most natural, and frequently employed transitions are those in

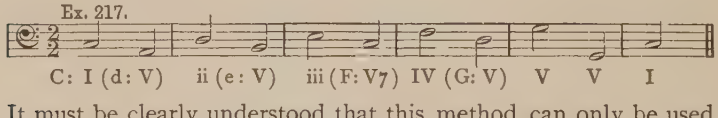
which the new tonic chords are also chords in the previously established key. For instance, in Ex. 205 (§ 283,) the third chord is not only i in D minor, but also ii in C major, and if the music immediately returned to the latter key, we should really have only *one* chord which was necessarily foreign to C. In that case, the chord of A major might be regarded as the *dominant of the supertonic* of C. Each common chord in the key of C can be thus attended by its own dominant; *e.g.*:

Ex. 216.



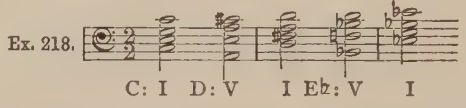
Here, strictly speaking, there is a transition in every bar; but, as the tonic chord following each new dominant is still a chord in the key of C, the mental effect of that tonality is never really lost. Such dominants we term TRANSITIONAL DOMINANTS, and in indicating the roots, it greatly simplifies our analysis, if we merely mark them in brackets, giving the following chord its root as in the already prevailing key. Thus we mark the roots in Ex. 216 thus: *

Ex. 217.



It must be clearly understood that this method can only be used when the tonic following the dominant chord is a *chord of the already prevailing key*. If it be not, there are two chords (and not merely one,) actually foreign to the key, and we have a transition: *e.g.*:

Ex. 218.

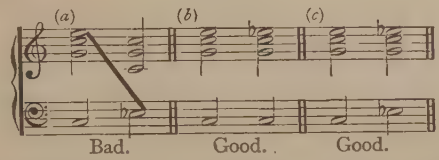


These are not transitional dominants, because the first chords in the second and third bars are not in the key of C. It should be added that Ex. 216 must not be regarded as an average specimen of the employment of transitional dominants; they are seldom found, as there, in four or five consecutive bars; the passage was written to illustrate the possibility of their employment on the various degrees of the scale. Single transitional dominants are, however, of constant occurrence.

* There will be no confusion in the mind of the student between these bracketed roots and those employed to indicate derivatives (§ 253), if it be remembered that the latter are always placed *under another root*, while the transitional dominants stand in the same line with the rest.

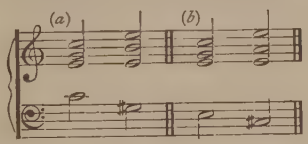
296. When in two consecutive chords a note forming part of the first chord is chromatically altered to become a note of the second chord, it is frequently best to keep it in the same voice. This is especially the case when the roots of the two chords are the same.

Ex. 219.



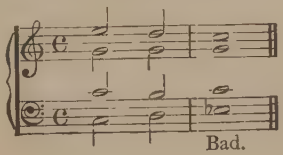
The progression at (*a*) is called a *False Relation.* The note to be altered should therefore be kept in the same voice, as at (*b*). If this be done, no false relation occurs by another voice moving to the same note, as at (*c*). The false relation is also not considered to exist when the altered note forms part of a fundamental discord (§ 232). For instance in Ex. 206 (*a*) the first chord of the third bar has C ♮ in the bass, and the second has C ♯ in the alto. But the latter is not objectionable, because it forms part of a chord of the dominant seventh. Neither do the chromatic chords in a key (to be explained in a later chapter) generally cause false relation, because the essence of false relation is the confusion or obscurity of key which it produces, and chromatic chords, *if properly treated*, have not this effect. But even in this case, when the chromatic chord has the same root as the preceding or succeeding diatonic chord, the altered note should be kept in the same voice. False relation, moreover, has no bad effect when the third of the first chord is either the root or the fifth of the dominant chord of a new key.

Ex. 220.



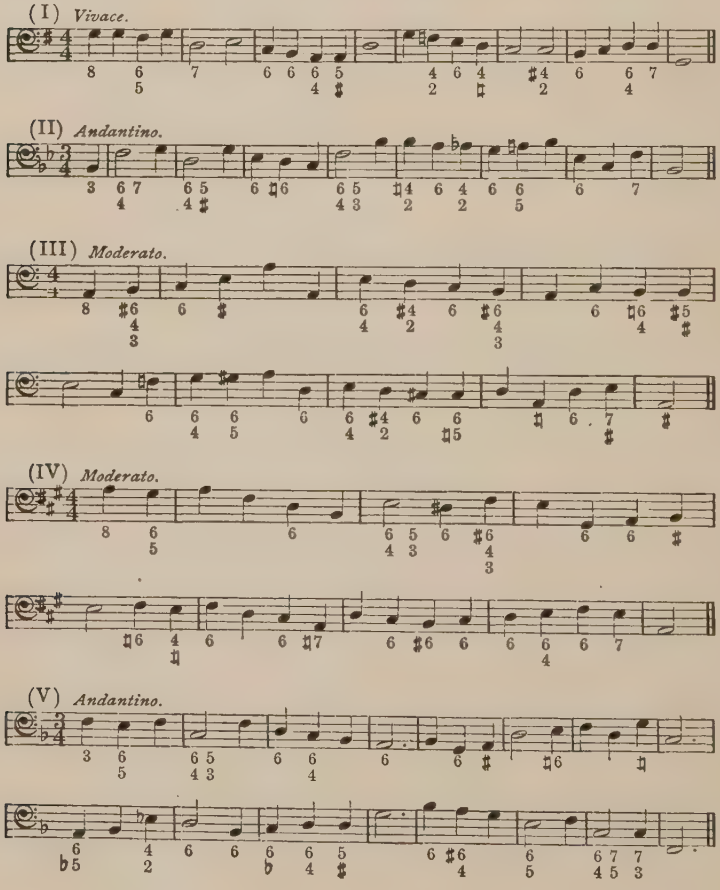
At (*a*) we can modulate from C major to A minor without bad effect because E, the third of the chord of C, is the root of the second chord. At (*b*) we proceed to D minor, the third of the chord of C being the fifth of the chord of A. It should be added that the interposition of one intermediate chord will not destroy the effect of a bad false relation, *e.g.*,

Ex. 221.

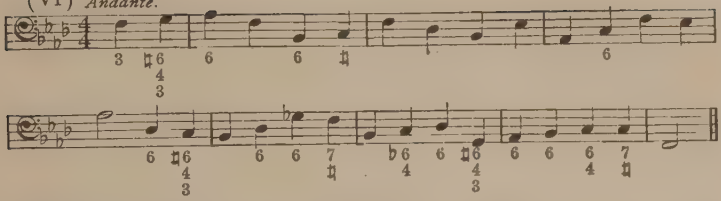


There are few questions on which theorists differ more widely than that of false relation, many passing it over without notice; and there is probably no rule to which there are so many exceptions. Only experience will enable the student to know with certainty when an apparently false relation is objectionable, and when allowable.

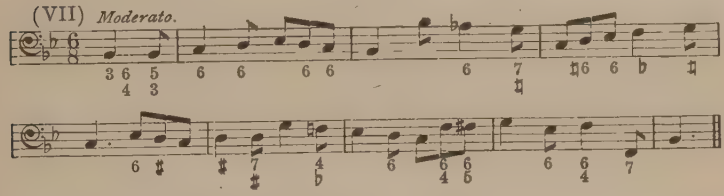
297. We now give a series of exercises on modulations. The student, if he notices the accidentals introduced, should have no difficulty in knowing into what keys the music modulates. In marking his roots, he must be careful to indicate every change of key; and when the modulation is made by means of a chord common to the two keys, he should mark it in its relation to both, as we have done in Ex. 204.



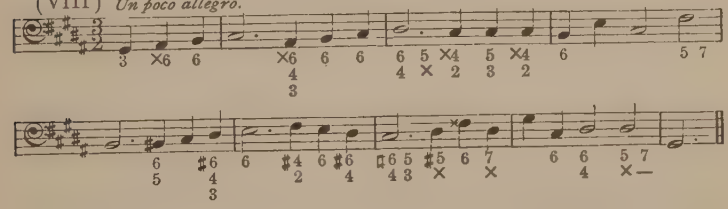
(VI) *Andante.*



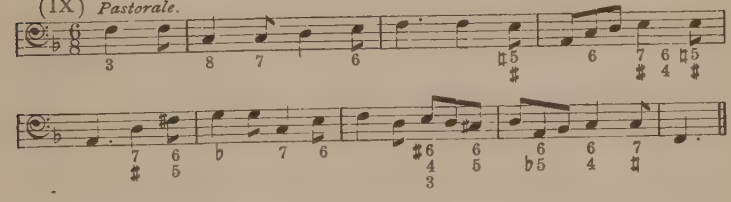
(VII) *Moderato.*



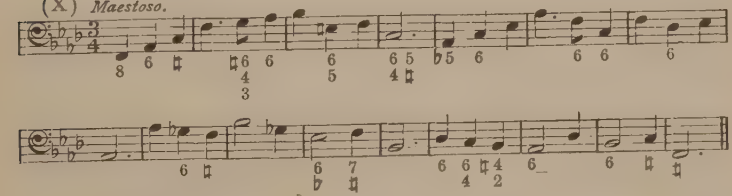
(VIII) *Un poco allegro.*



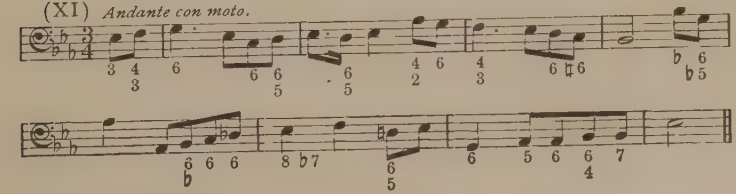
(IX) *Pastorale.*



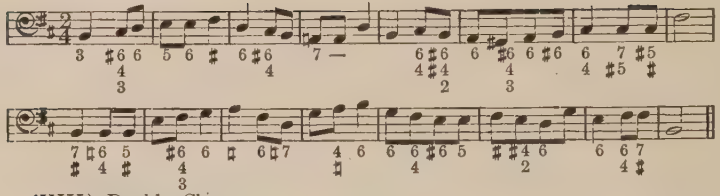
(X) *Maestoso.*



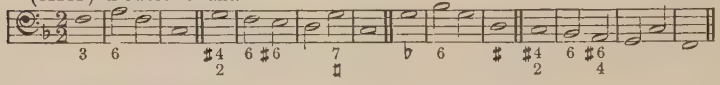
(XI) *Andante con moto.*



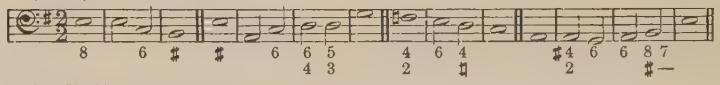
(XII) *Larghetto.*



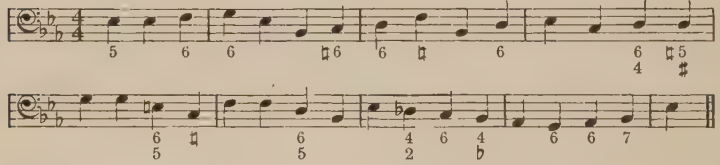
(XIII) Double Chant.



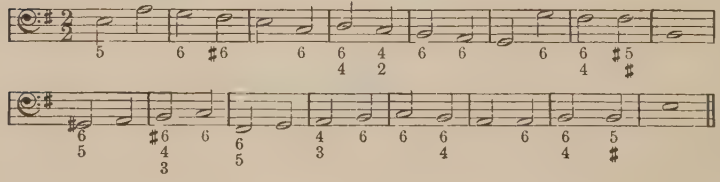
(XIV) Double Chant.



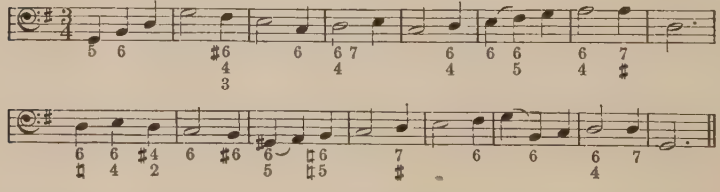
(XV) Hymn Tune.



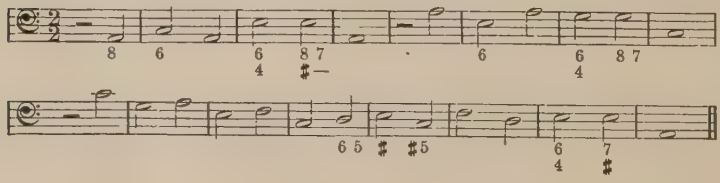
(XVI) Hymn Tune.



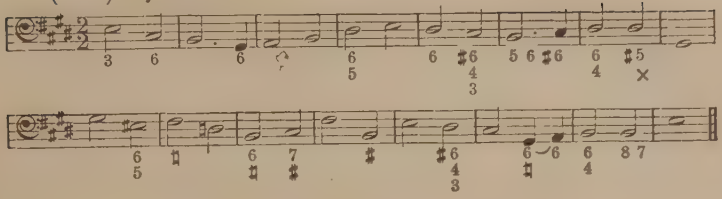
(XVII) Hymn Tune.



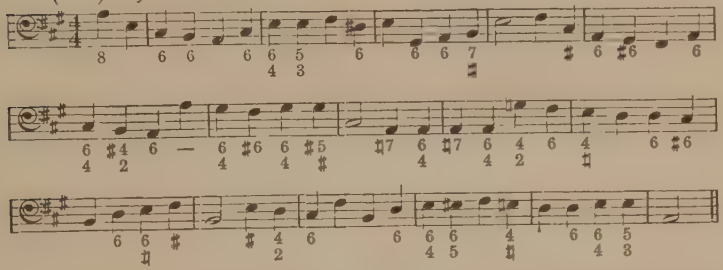
(XVIII) Hymn Tune.



(XIX) Hymn Tune.



(XX) Hymn Tune.



298. The student will now be able to attempt the harmonization of chorals containing modulations; but before he proceeds to do this, there are a few additional hints to be given him. The first refers to the cadences. We already know (§ 117,) that every piece of music must end with a full cadence; but, were a full cadence introduced at the end of every phrase, the effect would be extremely monotonous. For the "middle cadences" it is therefore generally better to employ other forms, unless the music modulates, in which case a full cadence in the new key is allowable. Of the various middle cadences, one—the "half cadence," ending on the root position of the dominant chord,—has been already explained (§ 178); there are two others which must now be briefly described.*

299. If one, or both of the two final chords of a full cadence be inverted, instead of their being both in root-position, we have an Inverted Cadence. Of this there are several possible varieties; among the most common are

(*a*) With dominant chord inverted: V*b*–I, V7*b*–I, V7*c*–I, vii°*b*–I.

(*b*) With tonic chord inverted: V–I*b*.

(*c*) With both chords inverted: V*b*–I*b*, V*c*–I*b*, V7*c*–I*b*, vii°*b*–I*b*, V7*d*–I*b*.

* For fuller details on the subject of cadences, see Counterpoint, Chapter XV.

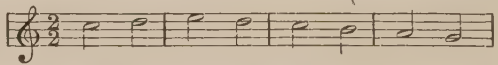
(The student is advised to write these progressions in four parts in various keys. He must remember that the tonic chord should in each case come upon an accented beat.)

300. If the dominant, as the penultimate chord in a cadence, be followed by *any other chord than the tonic*, we have an Interrupted Cadence. Almost any chord is possible after the dominant; but by far the most frequently used form, and the only one with which the student need at present trouble himself is V–vi (VI in a *minor* key.) An example of this cadence will be seen in § 242, Ex. 165.

301. In simple pieces of regular construction, the cadences will mostly be found at every fourth bar in duple or triple, and in every second bar in quadruple time. In the melodies now to be given, the position of the cadences, whenever they are irregular, will be indicated by a pause (𝄐) placed over the last note.

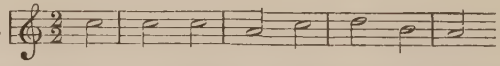
302. The key to which a modulation is to be made can sometimes be determined by the accidentals seen in the melody; but it is also possible for a modulation to be *implied*, without such accidentals, by the form of the melody itself. Full information on this point will be found in Chapter XVI of *Counterpoint;* it will suffice to say now that if a phrase ends with the descent from leading-note through submediant to dominant, *e.g.*

Ex. 222.



a modulation to the dominant—in this case with a "feminine ending," that is, an ending on an unaccented note—is generally implied; while if a phrase ends with the descent from the leading note to the submediant,—

Ex. 223.



it mostly indicates a modulation to the relative minor key.

303. In order not to unduly increase the bulk of this volume, we shall in future, instead of giving melodies to be harmonized, refer the student to the large collection to be found in *Additional Exercises to Counterpoint.** For his present work, we select the following from among the fifty Chorals given on pages 10 to 19 of that book. We have not chosen any which contain auxiliary or passing notes, the treatment of which will be explained in the next chapter.

CHORALS TO BE HARMONIZED:

Nos. 3, 5, 7, 10, 13, 16, 20, 25, 27, 30, 33, 42, 46.

* Published by Augener & Co.

Chapter X.

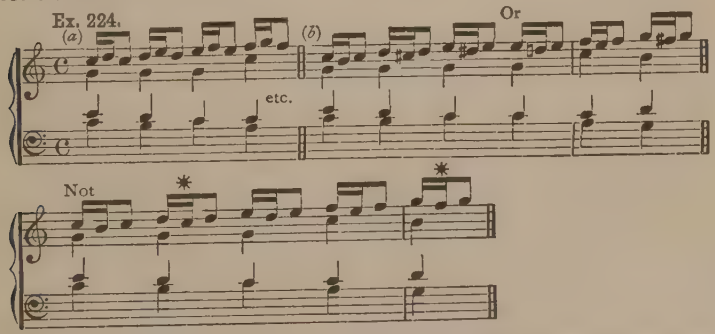
Unessential Discords (I)—Auxiliary Notes, Passing Notes, and Anticipations.

304. In explaining the various examples quoted from the works of the great masters to illustrate the chords already treated of, it has sometimes been needful to mention that some of the notes in the extracts were not notes of the harmony, but auxiliary or passing notes. It is now time to show the nature of such notes.

305. An Auxiliary Note is a note preceding or following a note of the harmony at a distance of a second above or below. As all seconds are discords, the auxiliary note will always be dissonant to at least a part of the chord with which it is sounded; but, as it is not itself an essential part of the chord, like the dissonant sevenths treated of in Chapter VIII, it is called an *unessential discord.*

306. An auxiliary note is frequently taken, and (excepting in certain cases to be specified presently) should always be left, by step of a second. It may occur on either a stronger or a weaker accent than the harmony note to which it belongs, and it may be at a distance from that harmony note of either a tone or a diatonic semitone above or below.

307. When an auxiliary note is *above* the harmony note, it should be the next note of the diatonic scale of the key in which the music is, whether that note be a tone or a semitone above; but if it be *below* the harmony note, it should be a semitone below it, unless such harmony note be the major third of a chord, in which case the auxiliary note may be either a tone or a semitone below it.



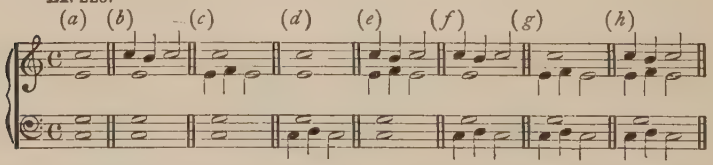
At (*a*) are shown auxiliary notes above the harmony notes, and

at (*b*) they are given below. In this example they are both taken and left by step; but we shall see many cases later in the chapter in which they are taken by leap.*

308. At (*b*) of the example just given will be seen the notes C♯ and D♯ in the key of C. If we look at the chromatic scale of C, given in Ex. 6 (Chapter I), we shall find D♭ and E♭ given as the notes lying respectively between C and D, and D and E, as chromatic notes. When later in this volume we treat of chromatic chords in the key, we shall show that D♭ and E♭ are really the notes employed for chromatic harmony (Chapter XV). We cannot therefore also have their enharmonics without getting more than twelve notes into the key. But though C♯ and D♯ cannot be used as *harmony* notes in C, they may be used as *auxiliary* notes below D and E. The restriction of a key to twelve notes applies only to notes of the harmony. Similarly G♯ and A♯ can be used as auxiliary notes below A and B respectively.

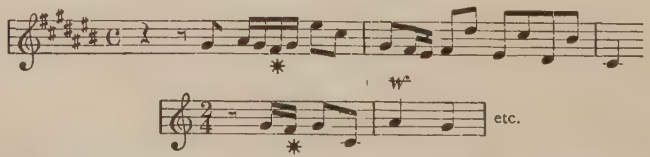
309. Auxiliary notes may be taken in more than one part of the harmony simultaneously, *provided that characteristic notes of the harmony remain in some of the parts.*

Ex. 225.



At (*a*) is the chord of C major. At (*b*) an auxiliary note is added in the treble, at (*c*) in the alto, and at (*d*) in the bass. In each case the chord remains the chord of C. If auxiliary notes are taken in treble and alto together, as at (*e*), the C in the bass still preserves the feeling of the chord, as do the E in the alto of (*f*) and the C in the treble of (*g*). But if all three auxiliary notes are taken together, as at (*h*), the feeling of the

* The rule given in this paragraph is almost universally observed by modern composers. Bach, however, frequently adheres to the diatonic scale for an auxiliary note below, as well as above the harmony note, as in the two following fugue subjects from the "Wohltemperirte Clavier."



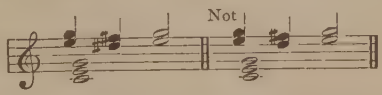
In both these passages a modern composer would have unquestionably written the auxiliary notes a semitone, and not a tone, below the dominant.

chord of C is gone, and we have instead of it the second inversion of the dominant seventh on G. The notes D, F, and B are no longer auxiliary, but harmony notes, and the chord is a "passing chord."

310. Passing Chords are those in which all the notes, or at least enough of them to remove the impressson of the previous harmony, are approached and left by step. They are of two kinds,—those in which the resulting combination of auxiliary notes gives a chord which might be an independent chord, as at (*h*) above, and those in which the resulting chord could either not be used at all, or would have a different resolution. We shall give examples of this kind presently (§ 320). With regard to the first kind, it is impossible to give a hard and fast rule as to when it should be so considered; this largely depends on the length of the chord and its position in the bar. If in the example just given the chords were mostly moving in minims or semibreves, it would be best to regard the second chord of (*h*) as a passing chord; if the time were slower, and the harmony changed at each crotchet, the chord should be treated as an independent chord, and marked V7*c*. Passing chords are indicated in analysis by the letters "P. C."

311. It was said in § 307 that the auxiliary note below a major third might be either a tone or a semitone below it. If, however, the fifth of the chord have also an auxiliary note below it, which will be at the distance of a semitone, the auxiliary note of the third must also be a semitone below.

Ex. 226.

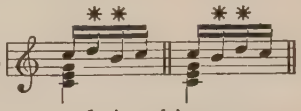


312. Let the student now examine the auxiliary notes that have been met with in some of our examples. At Ex. 159, in the second bar, the second quaver, C, is an auxiliary note to D taken and left by step. At Ex. 176 the E♮ in bar 1 is an auxiliary note to F, taken by leap and left by step. In Ex. 182 the B♮s in the first bar and C♯s in the second are auxiliary notes to C and D respectively. Similarly the upper note of any shake and the upper and lower notes of any turn are always auxiliary notes. In Ex. 211 in the third bar the A♯ is an accented auxiliary note, taken by leap of a third and left by step.

313. There are two cases in which an auxiliary note can be quitted by leap of a third, instead of by step. Such a note, if taken by step of a second from a harmony note, may, instead of returning direct to that note, leap a third to another auxiliary note on the opposite side provided that this second note return

at once to the harmony note from which the first moved, and which lies between the two auxiliary notes.

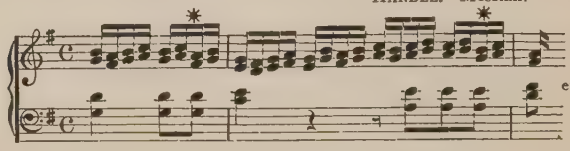
Ex. 227.



Two auxiliary notes used in this manner are usually called *changing notes*. An excellent example of them in two parts will be found in Handel's chorus "For unto us a child is born."

HANDEL. Messiah.

Ex. 228.

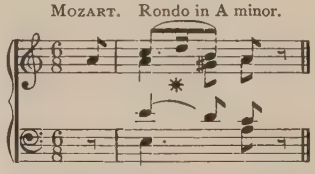


This extract also furnishes an excellent illustration of auxiliary notes a tone below the third of the chord, and a semitone below the root and fifth. In the third crotchet of the second bar is an auxiliary note a tone, instead of a semitone below the root. Such diatonic progressions were more common in the 18th century than now. (Compare note to § 307.)

314. The second case in which an auxiliary note may be quitted by leap is when the harmony notes are a second apart, and the first note moves a second to an auxiliary note on the *opposite* side to the next harmony note, to which it then leaps a third. This progression is much more common when the step is upward and the leap downward than in the reverse direction. Such notes may be called "single changing notes."

MOZART. Rondo in A minor.

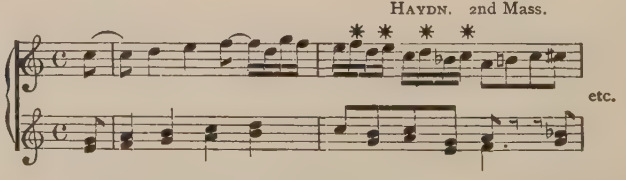
Ex. 229.



Here the harmonic progression is evidently a: i*c* V7 i. The C in the first chord rises to D, and then falls a third to B. In the following passage,

HAYDN. 2nd Mass.

Ex. 230.

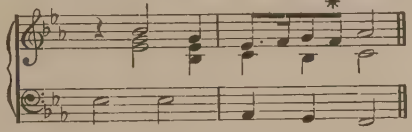


we have a series of similar notes in quick time. The very rare

converse case—the falling second and rising third—

H. Lawes.—Song, "While I listen to thy voice."

Ex. 231.

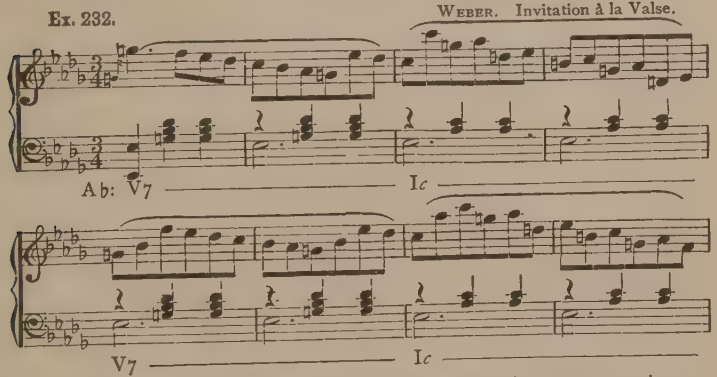


is quoted from Hullah's "Transition Period of Musical History."

315. There is no restriction as to *taking* auxiliary notes by leap, though there is as to *leaving* them. When the notes of a chord are taken in succession, it is not uncommon to find each note preceded by an auxiliary note. The latter may be either on the accented or the unaccented part of the beat.

Ex. 232.

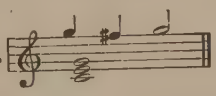
Weber. Invitation à la Valse.



We have marked the roots here, because it gives us occasion to point out that, in analyzing the harmony, no account is to be taken of auxiliary or passing notes, because they are unessential discords (§ 305). At the third and fourth bars of this passage are seen accented, and at the seventh and eighth unaccented auxiliary notes to each note of the tonic chord.

316. When an auxiliary note, proceeding by step from a harmony note, moves to another note of the harmony, either of the same or the following chord, instead of returning to the first one, it is called a Passing Note. These notes, excepting in chromatic passages, are almost invariably taken according to the diatonic scale of the passage in which they occur. For instance, in the chord of C an auxiliary note below G would be F♯ (§ 307).

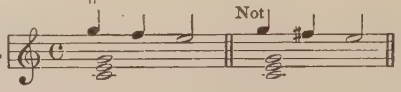
Ex. 233.



But if, instead of returning to G the auxiliary note proceeds to

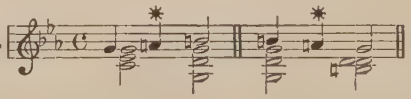
E, it then becomes a *passing* note; and, if the music at the time were in the key of C, and not of G, this passing note must be F♮ and not F♯.

Ex. 234.



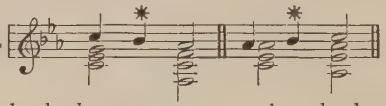
317. In the minor key, in order to avoid the interval of the augmented second between the sixth and seventh degrees of the scale, it is customary to use for passing notes the two *melodic* forms of the scale given in Exs. 132, 134, instead of the *harmonic* form given in Ex. 138. Therefore in passing from the dominant to the leading note of the minor key, or in the reverse direction from leading note to dominant, the *major sixth* of the key is mostly taken as the passing note.

Ex. 235.



Similarly, in passing from submediant to tonic, or from tonic to submediant, the minor seventh of the scale will be used.

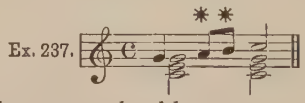
Ex. 236.



It is *possible* in both these cases to employ the harmonic form of the scale; but this is very unusual.

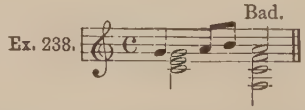
318. If the two harmony notes are a fourth apart, as, for instance, in rising from the fifth to the root of a chord, there will evidently be two passing notes between them.

Ex. 237.



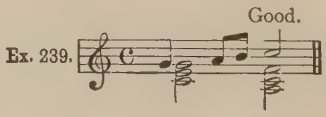
A second passing note should never return to the first, even though by a change of the harmony the first may have become a harmony note.

Ex. 238.



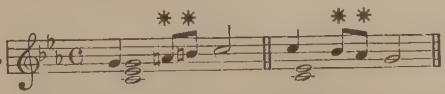
but the second note must proceed in the same direction till it reaches the next note of the first chord, which may or may not have become a note of a different chord.

Ex. 239.



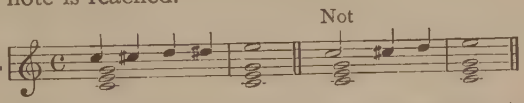
If two passing notes follow one another in rising from the fifth to the root of the tonic chord in a minor key, or in falling from the root to the fifth, it is usual to employ the *melodic* forms of the minor scale, as in Exs. 235, 236, with the major sixth and seventh in ascending, and the minor seventh and sixth in descending.

Ex. 240.



319. Chromatic notes, as well as diatonic, may be used as passing notes; but if a chromatic note has been introduced it is best to continue the progression by semitones until the next harmony note is reached.

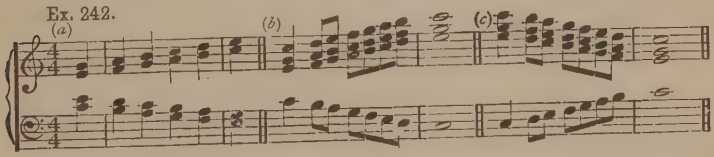
Ex. 241.



In this example the chromatic notes are written as C♯ and D♯, not as D♭ and E♭ (See § 308.) This is because they are moving upwards; if they were descending, it would have been better to write them as flats. This point will be more fully explained later.

320. Passing notes may be taken in more than one part of the harmony by contrary motion from a harmony note, and continue by contrary motion, and always by step, until another consonant chord is reached; *e. g.*—

Ex. 242.

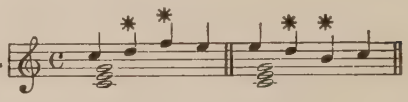


It is progressions of this kind that cause the second kind of passing chords spoken of in § 310. Some of these chords could be used as independent discords; but it would be impossible in that case to follow them as they are here followed, (we will not say "resolved.") In the last four chords of (*b*) will be seen the progression V7*d* vi*c* vii°*b* I, which we met with (§ 264,) in the rare resolution of V7*d* on vi*c*; the student will now understand why, in explaining the progression, vi*c* was spoken of as having the character of a passing chord.

321. The only case in which a passing note may be quitted by leap is when the two harmony notes which it connects are at a distance of a third apart, and the passing note instead of going direct to the second harmony note, leaps a third to the

other side of it, and then returns.

Ex. 243.



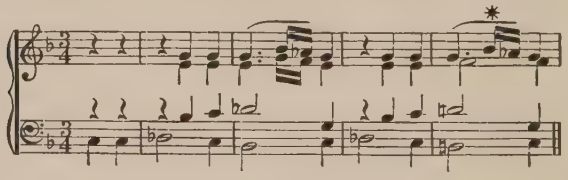
This is another variety of the "changing notes" mentioned in § 313.*

322. We will now, as with the auxiliary notes, refer to the passing notes in some of the extracts quoted in previous paragraphs. In Ex. 110 we see on the last quaver of the second bar an example of an accented passing note, E. A still more striking example is shown in Ex. 121, where the G♯ at the beginning of the second bar is not only a passing note on the first beat of the bar, but is of greater value than the harmony notes which precede and follow it. The two scales quoted from Handel in Ex. 136 are instructive, because though they contain exactly the same notes, the passing notes are different, as they are differently accompanied. In the first scale C, B, G, and E♮ are passing notes, and in the second C, A, F♯, and E♮. At Ex. 141 (*b*) the second quaver of the bar, C, is an unaccented passing note; and at Ex. 201 the quaver B is an accented passing note. In Ex. 232 accented passing notes are seen in the second bar, and unaccented in the fifth and sixth.

323. It is important to notice that auxiliary and passing notes cannot make "false relation" (§ 296), and that even the interval of the diminished octave may be sometimes used with very fine effect. One of the best known and most beautiful examples is seen in the "Recordare" of Mozart's Requiem:

Mozart. Requiem.

Ex. 244.



here the effect of the B♭ in the soprano against the B♮ in the bass is most poignant and striking.

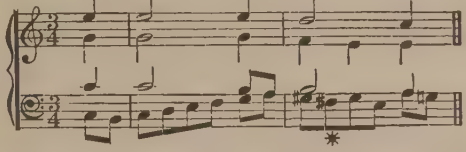
324. A curious example of an auxiliary note in the bass at the distance of a diminished octave from the harmony note is

* Some exceptional progressions of auxiliary notes will be shown later in this chapter; but these do not invalidate the general rules here given.

found in one of Bach's Church Cantatas.

J. S. Bach. "Herr Gott, dich loben alle wir.

Ex. 245.

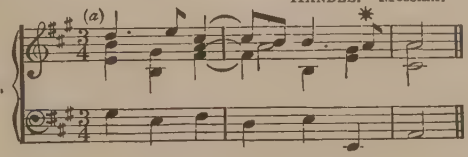


Here the effect is much harsher than in the passage from Mozart just quoted, and the extract is not given for the student's imitation, but to show its harmonic possibility.

325. Besides the two kinds of auxiliary notes already spoken of, there is a third species somewhat resembling them, though possessing features of its own. Sometimes one or more parts of the harmony proceed prematurely to their notes in the next chord, while the others remain. This effect is known as an Anticipation.

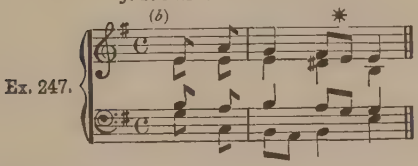
Handel. Messiah.

Ex. 246.



J. S. Bach. "Gieb dich zufrieden."

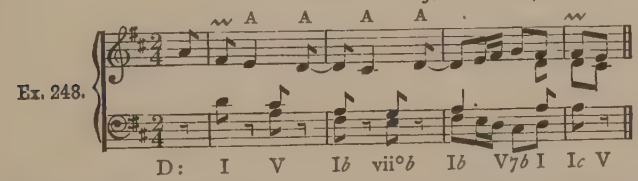
Ex. 247.



In Ex. 246 the root of the final chord is anticipated in the treble; and in Ex. 247, both root and third are anticipated. In Ex. 193 we see in the final cadence the anticipation of the complete chord of the tonic. It is in cadences such as these that anticipations are most frequently to be seen; but they are also employed in other ways:—*e.g.*

J. S. Bach. 4th Partita.

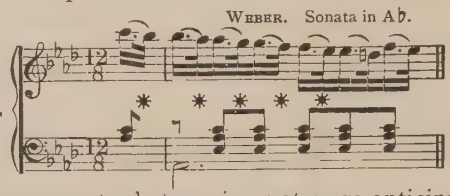
Ex. 248.



Here we have marked the roots, to show the points at which the harmony changes; the 'A' over the notes of the melody

indicates an anticipation. In our next example,

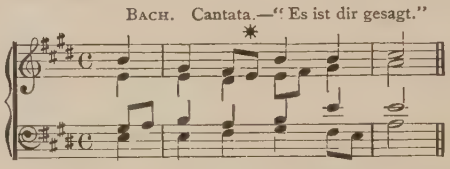
Ex. 249.



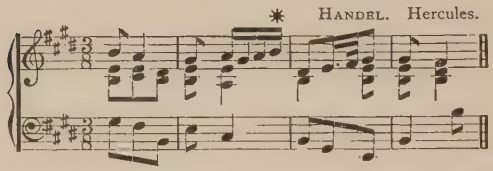
not only harmony notes but passing notes are anticipated.

326. Occasionally, though rarely, a note is anticipated in one voice, and then taken in another, as in the following examples:

Ex. 250.



Ex. 251.



In Ex. 250, the note E of the alto in the third crotchet of the bar is anticipated in the treble; and in Ex. 251 the first quaver in the third bar of the bass is similarly treated.

327. We will now briefly summarize the laws for the employment of auxiliary and passing notes.

I. Auxiliary notes may be taken either above or below a harmony note. They can either be taken by step, in which case they must be preceded by the same harmony note which follows them, or by leap from a different harmony note.

II. Passing notes can be introduced between any two harmony notes which are a third apart. If the two harmony notes be a fourth apart, and are the root and fifth of the same chord, two consecutive passing notes can be employed, in which case the second may never return to the first (§ 318).

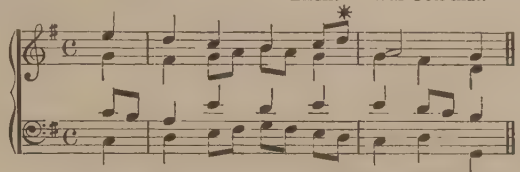
III. Changing notes (§ 313,) can be used either when the same harmony note is repeated, or when the second harmony note is a third above or below the first.

IV. A single changing note (§ 314,) had better be only employed when the harmony note which follows it is at the distance of a second *below* that which precedes it. The converse progression (see Ex. 231,) can very seldom be employed with good effect.

328. Exceptional treatment of auxiliary notes is sometimes found in the works of the great masters. The following passages must be looked upon as licences, as they cannot be explained by any of the rules given in this chapter. They are therefore not recommended for imitation.

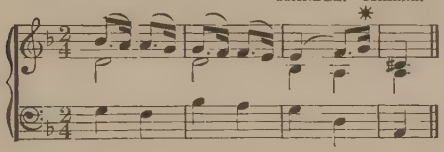
Bach. "Was Gott thut."

Ex. 252.



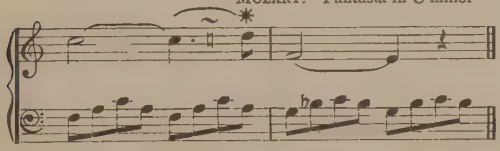
Handel. Athalia.

Ex. 253.



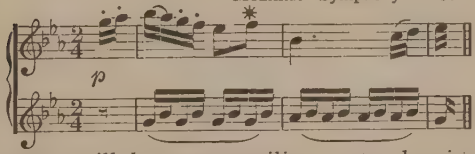
Mozart. Fantasia in C minor

Ex. 254.



Mozart. Symphony in E♭.

Ex. 255.



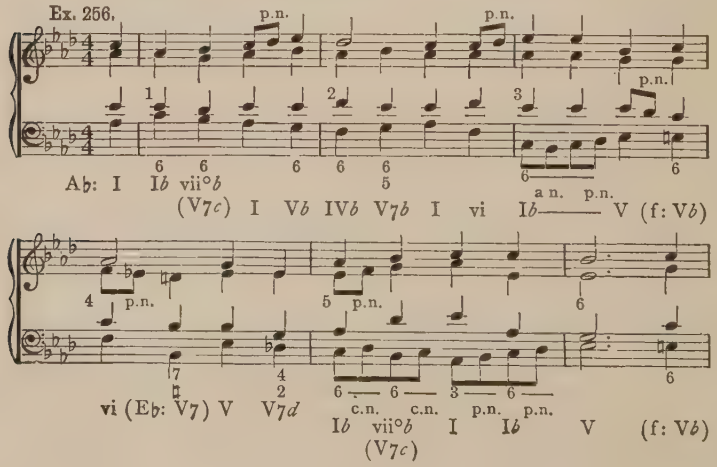
At Exs. 252, 253 will be seen auxiliary notes leaping a fourth and a diminished fifth, instead of a third, to the harmony note. At Ex. 253 we also have an excellent example of the anticipations spoken of in § 325. The note D at the end of the first bar of Ex. 254 is clearly an auxiliary note, because the harmony is defined as being that of the common chord of F by the arpeggio in the bass. (*See* § 228.) Here the auxiliary note leaps a sixth, while at Ex. 255 it leaps a fifth. The F in this last example may also be considered as an anticipation of the implied harmony of the following chord (the dominant seventh), and would thus present some analogy to Ex. 251. The student will do well to conform to the rules we have given till he has gained sufficient experience to know when they may be safely relaxed.

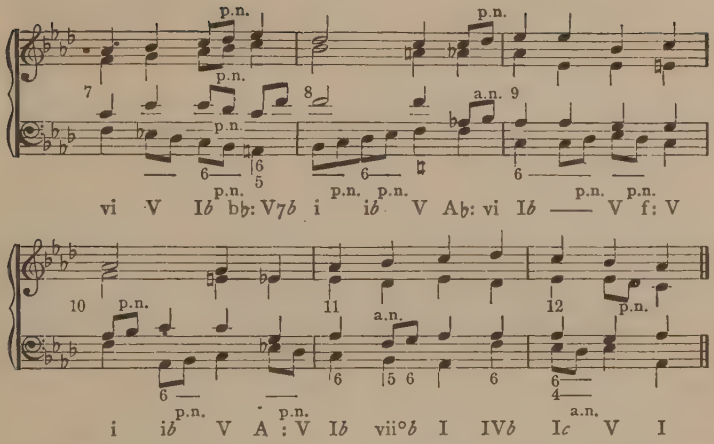
329. Though we have given rules for the treatment of auxiliary notes, it is impossible to give similar rules as to when and where they should be introduced. This is a matter entirely at the discretion of the composer. We therefore do not give any

special exercises for such notes; in his future work the student can employ auxiliary and passing notes whenever he thinks it advisable. Excepting occasionally with *accented* auxiliary notes, they are hardly ever indicated in the figured bass, nor (as remarked in § 315,) is any notice taken of them in marking the roots. If the passing notes are in the bass, this is shown by a line continued under them from the preceding harmony note, as will be seen in our next example (Ex. 256). If this note have no figure under it, but only a line, it signifies the root position of a triad. (See bars 7 and 8 of the next example.) But there is one hint which may help the learner, when harmonizing a melody, to determine which notes it is expedient to treat as auxiliary notes. In most melodies, chorals, etc., of the simple kind that he will at present have to harmonize, there is generally some uniform rate of what we may term harmonic pulsation,—*i.e.*, that, excepting on the last note of a phrase or sentence, the harmony will mostly change at a regular rate—on each crotchet or minim, as the case may be. If two notes of half the value of the standard—two crotchets, if the harmony move in minims, two quavers if it move in crotchets, etc.—are found on adjacent degrees of the scale, it will be generally better to treat one of the two as an auxiliary or passing note than to give a separate chord to each.

330. This principle will be best shown by practical illustration. We will therefore take a melody from the *Additional Exercises to Counterpoint*, which contains passing notes, and harmonize it, introducing passing notes in the other voices. In our analysis, auxiliary, passing, and changing notes will be marked respectively 'a.n.,' 'p.n.' and 'c.n.' We take the choral "Nun ruhen alle Wälder" (p. 12, No. XIV).

Ex. 256.

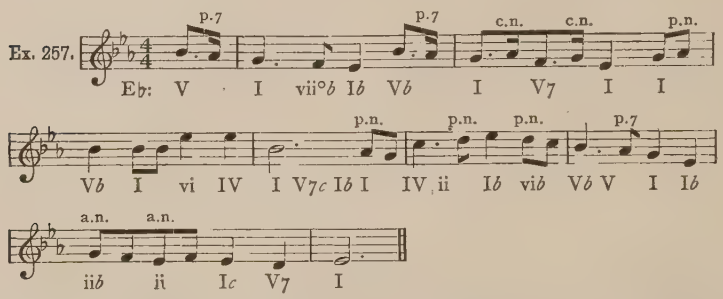




We have numbered the bars, for reference. In the first and second bars are seen passing notes in the treble; and in the third bar are auxiliary and passing notes in bass and tenor. The cadence in bar 4 may be regarded as a modulation into E flat; we have marked the second chord as a transitional dominant (§ 295,) because it is the *only* chord which cannot be regarded as possibly in A flat. In the bass of bar 5 are seen single changing notes in the first half of the bar; on the second quaver of this bar the auxiliary notes in the bass and alto give IV as a "passing chord" (§ 310). Another passing chord is found at the sixth quaver of bar 7. In bar 11 we have marked the F in the tenor as an auxiliary note, rather than the following G as a passing note, because the former would have given the progression ii—I, which is bad (§ 195). It should be noticed that F, being an *accented* auxiliary note, is indicated in the figuring. We might have considered that there were two chords (ii. vii°*b*,) here; but as the harmony moves in crotchets, it is better to regard F as an auxiliary note. A similar case is seen in bar 12, when the D of the alto, a passing note, changes V into V7. Such a seventh, when of small value, is called a "passing seventh," and may be marked "p. 7."

331. It will not always be necessary, nor even advisable, to introduce so many auxiliary notes as we have done in this choral,—we have purposely used them freely, to give the student examples of many different ways in which they could be employed. We will now conclude this chapter with an example of a melody in which it will be well to treat several of the notes as accented auxiliary and passing notes. Instead of harmonizing it in full, we give merely the melody, indicating beneath it the roots of the bass. The student should write it out in full for himself. We

select for our example the old English air "The Bailiff's Daughter of Islington" (*Add. Exs. to Counterpoint*, p. 20, No. 111.)



The harmonization given here is very simple; we need only say that in the fourth bar we have marked three chords under the dotted minim, to keep the flow of crotchets unbroken.

332. The student will now be ready to begin the harmonization of melodies containing auxiliary notes. Of these he will find a large collection in the *Additional Exercises to Counterpoint*. He should in the first instance select (or his teacher should select for him,) simple chorals and such melodies as are not too elaborate and florid. If the theme selected contain many notes of short value (*e.g.*, No. X on p. 22, or No. XX on p. 37,) it would be a grave mistake to put a separate chord to each note. If two such notes are a second apart, one of the two had better be treated as an auxiliary or passing note; if they are more than a second apart, and the first is accented, they should be considered as two notes of the same chord. We advise the student to plan out his harmony, and to sketch in his bass—subject, of course, to possible subsequent alteration—before filling in his middle parts. He can introduce auxiliary and passing notes wherever he thinks it advisable; but he must remember always to take care that such notes do not make consecutive fifths or octaves with the harmony notes that immediately precede or follow them.

CHAPTER XI.

UNESSENTIAL DISCORDS (II)—SUSPENSIONS.

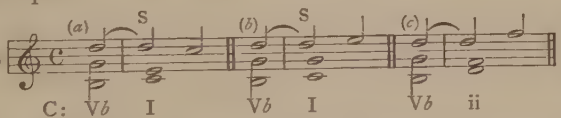
333. Of the unessential discords treated of in the last chapter, the auxiliary and passing notes are used to connect two chords of neither of which they are component parts; the more rarely used anticipations are notes of the harmony that follows, but not of that which precedes them. We have now to speak of another class of unessential discords, in which the dissonant note is a note not of the following, but of the preceding chord. Such discords are called SUSPENSIONS.

334. A suspension may be very simply defined as a *note of one chord held over another of which it forms no part.* The sounding of such a note as a note of a chord is called the *preparation* of the suspension; the holding of the note over the following chord, to which it does not belong, is the *suspension* itself; and the ultimate progression of the suspended note to its place in the chord is called its *resolution.**

335. The general rules governing the treatment of suspensions are extremely simple. It will be convenient first to enunciate them as clearly as possible, and then to give examples enforcing the rules from the works of the great masters.

336. I. Any note of one chord may be suspended over the following chord, provided that it is able to move by step of a second upward or downward to one of the notes of that chord. For example—

Ex. 258.



at (*a*) the D of the first chord is held over the chord of C, and moves down by step to the octave of the root; and (*b*) it rises by step to the third of the chord. But at (*c*) there is no suspension; because the D is a note of the second chord, and moves by leap of a third; besides which a suspension cannot form a part of the chord over which it is held. (§ 334.) The suspension is indicated by "S."

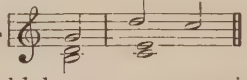
337. The figuring of suspensions will be explained later; we stop here, before giving further rules, to remark that, being

* Evidently a suspension cannot be prepared by a passing note, for that would not be a note of the preceding chord.

unessential discords, they are not indicated in marking the roots; the true nature of the chord is seen when the suspension is resolved. We now proceed with our rules.

338. II. The preparation of a suspension (that is, the sounding in the preceding chord of a note to be suspended) must be in the same voice with the suspension itself. This is shown at (*a*) and (*b*) of Ex. 258. But if the D in those examples were not prepared in the same voice, *e.g.*—

Ex. 259.



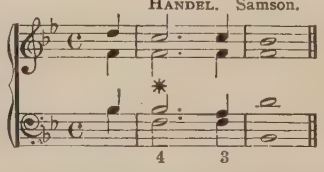
the second note would be not a suspension, but an accented auxiliary note.

339. III. The suspension must always be on an accented beat of a bar (in triple time, either the first or second beat—see § 189, *note*); the suspended note may be either tied or repeated; and the resolution of the suspension must be on a less strongly accented beat than the suspension itself.

340. IV. If the suspension be tied to its preparation, the latter should be of at least equal length with the suspension; it may be longer, but it should not be shorter. When the suspended note is sounded again, this rule is not so strictly observed; *e.g.*—

HANDEL. Samson.

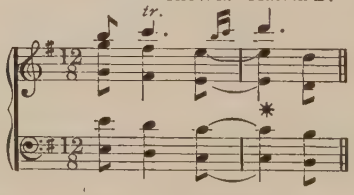
Ex. 260.



Here the B flat in the second chord is not a part of the dominant triad; it is a suspension, of the value of a dotted minim; but its preparation is only a crotchet. Occasional exceptions from this general rule are to be found, as in the following passage—

BEETHOVEN. Mass in D.

Ex. 261.



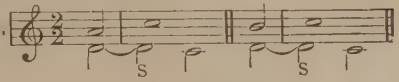
where a suspended crotchet is prepared by a quaver, but the student is advised to adhere strictly to the rule here given.

341. V. The note on which a suspension resolves may be sounded at a distance of at least an octave below the suspension; but should not be heard above it, excepting when it is approached

by step, and in contrary motion; *e.g.*

(*a*) Not good. (*b*) Good.

Ex. 262.

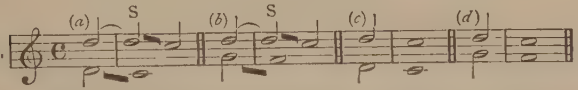


This exception is illustrated in Ex. 261, where the D in the upper part, on which the suspended E in the middle of the harmony resolves, is approached from C.

342. VI. As a suspension is only a temporary substitute for the harmony note which follows it, a progression which would be incorrect without a suspension is not justified thereby.

For example,

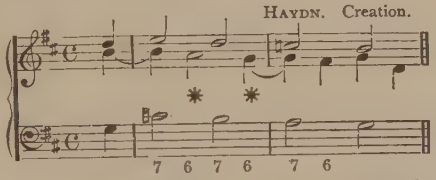
Ex. 263.



the suspension (*a*) involves the same consecutive octaves as are seen at (*c*); and (*b*) the same consecutive fifths as at (*d*). This rule, however, is not always strictly observed by the old masters in the case of fifths, where the progression is less unpleasing than with the octaves.

HAYDN. Creation.

Ex. 264.

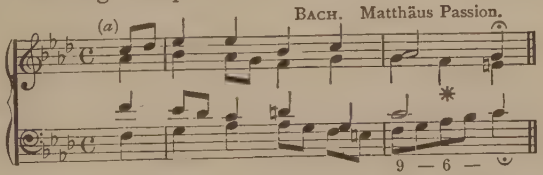


If the suspensions are omitted here, we have clearly consecutive fifths between the two upper parts; but the effect of the passage is quite unobjectionable.

343. VII. A suspension always resolves on the chord over which it is suspended; but it is by no means unusual for the chord to change its position on the resolution of the suspension, as in the following example:

BACH. Matthäus Passion.

Ex. 265.

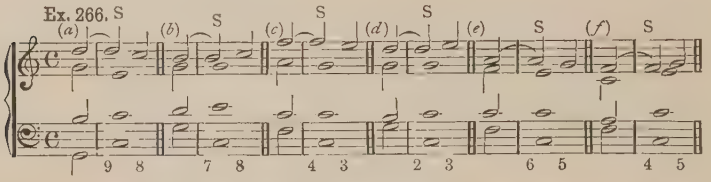


Here the G in the last bar of the alto is a ninth suspended over the root position of the chord of F minor. At the moment of resolution the bass goes to A flat, and the suspension is resolved on the first inversion of the same chord. The student will hardly need to be reminded that G and B in the bass are passing

notes. But if the root of the chord changes at the moment of resolution, the preceding chord is not really a suspension.

344. It was said just now (§ 336) that any note of a chord can be suspended over the next chord, provided it can move by step to a note of that chord. But to this general rule there are certain practical limitations.

Ex. 266.



At (*a*) the ninth, and at (*b*) the seventh, are suspended over the root of the chord. Observe that D is here spoken of as a ninth, and not as a second above the root, because a suspended ninth resolving downwards may never be at a distance of a second from the root; otherwise its resolution gives the forbidden progression (§ 81,) from a second to a unison. At (*c*) the fourth is suspended over the third; and at (*d*) we suspend the second (which can now really be one,) over the third. At (*e*) and (*f*) we see the sixth and the fourth suspended over the fifth of the chord. The upward moving suspensions at (*d*) and (*f*) are rare; that at (*b*) is somewhat more common; but in general suspensions resolving downwards are far more frequently used than those resolving upwards.

345. The practical limitations of which we spoke just now are seen as soon as we try to make a suspension over any of the dissonant notes of a fundamental chord. The note above the seventh is the root, and the note below it (as we shall learn later,) is the thirteenth of the chord; similarly, the notes above and below the ninth are the third and root, above and below the eleventh, the fifth and third, and above and below the thirteenth, the seventh and fifth. All these are notes of the chord; and a suspension has been already defined (§ 334,) as a note of one chord held over another *of which it forms no part.* In practice, therefore, the only notes over which suspensions can be held are the notes of a triad—the root, third, and fifth.

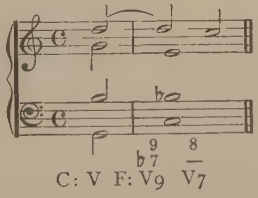
346. In § 175 it was said that the rules given for finding the root of a chord from the figured bass (§ 174,) needed modification in the case of suspensions; we must now show the nature of these modifications. At (*a*) in Ex. 266, the 9 under C would appear to indicate that we have here a chord of the ninth. But when in the next chapter we treat of these chords, we shall find that the root position of a chord of the ninth will be accompanied by the minor seventh; the absence of that note here

proves the D to be a suspension. At (*b*) the 7 cannot possibly be a chord of the seventh; for no chord of the seventh can resolve upon its own root (Ch. VIII). At (*c*) the figure 4 cannot show that F is the root, for the G is not a part of the chord of F; neither, for a similar reason, can 2 at (*d*) indicate D as the root; for neither C nor G form part of the chord of D. The suspension 6 5 at (*e*) is ambiguous, for the progression might possibly be vi♭ I; for this reason this suspension is less frequently employed than others. A good rule for the guidance of the student will be the following:

Whenever two figures next to one another (9 8, 4 3, 2 3, etc.) are found under the same bass note, *the second of the two being a consonance*, the first of the two will indicate a suspension, in the absence of positive proof to the contrary.

347. The student will see what is meant by this qualifying clause, if we vary Ex. 266 (*a*).

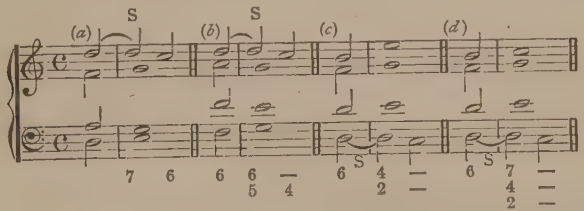
Ex. 267.



Here the addition of B♭ changes the suspension into a genuine dominant ninth in the key of F. But 9 8 alone will show a suspension.

348. The suspensions shown in Ex. 266 can be taken in their inversions. We first give the inversions of 9 8.

Ex. 268.



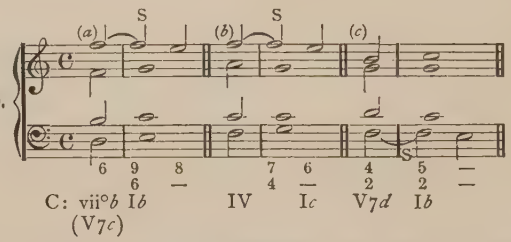
It will be seen that the figurings of the inversions (*a*) (*b*) and (*c*) are identical with those of the chord of the seventh and its first and third inversions. But the student need never make a mistake if he will notice *the chord by which each is followed.* As to (*d*) there can be no mistake. A 7 followed by 6, a $\frac{6}{5}$ followed by $\frac{6}{4}$, and a $\frac{4}{2}$ with both these notes remaining stationary over the following bass note, always show inversions of a 9 8 suspension. Therefore the 7 must not be accompanied by the

fifth, the $\frac{6}{5}$ by the third, nor the $\frac{4}{2}$ by the sixth, these notes being no part of the chord over which the suspension is held.

349. If the student has accustomed himself to mark the roots before filling up his harmonies from the figured bass, he will be able to identify these suspensions without any difficulty. Supposing that in Ex. 268 he has marked the 7, $\frac{6}{5}$, and $\frac{4}{2}$, as chords of the seventh, they would be respectively iii7, iii7*b*, and iii7*d* in the key of C. We shall learn later that these chords are all possible, but that their treatment would be different.

350. We will now show the inversions of the 4 3 suspension seen at Ex. 266 (*c*).

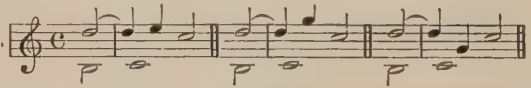
Ex. 269.



This example requires no explanation; we will only remark that the figuring of these inversions, being different from any which the student has yet met, will cause no risk of confusion, as in the case of the inversions of the 9 8.

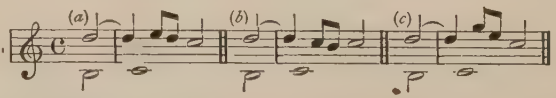
351. Like the chord of the seventh (§§ 237–239), a suspension can have an ornamental resolution. This is effected by giving the suspended note only half its proper length, and interposing between it and the note of its resolution either a note of the chord taken by step or leap,

Ex. 270.



or notes of shorter value, which may be either harmony notes or a mixture of these with auxiliary notes, the latter being of course subject to the rules given in Chapter X.

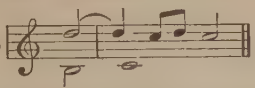
Ex. 271.



The resolutions at (*a*) and (*b*) are very common; that at (*c*) is rarer, and less advisable. In example (*b*) it must be remarked that although the suspension takes the note of its resolution, C, on the second crotchet of the bar, this is not counted as its actual resolution, because it does not remain there. If after

descending to C we had returned to D for the second quaver,

Ex. 272.



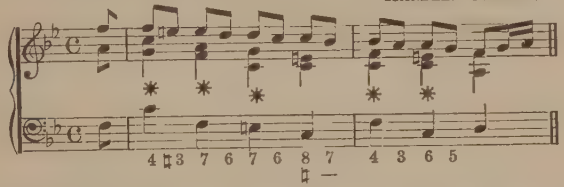
the progression would have been monotonous and weak.

352. Occasionally in the case of an ornamental resolution of a suspension, the preparation of the suspension will be only of the same length as the suspension without its ornamentation. Though examples of this are not infrequent, the method is not recommended for the student's imitation.

353. We shall now give a series of examples illustrating the treatment of suspensions by the great masters. Our first extract will be a well-known passage from the "Messiah."

HANDEL. Messiah.

Ex. 273.

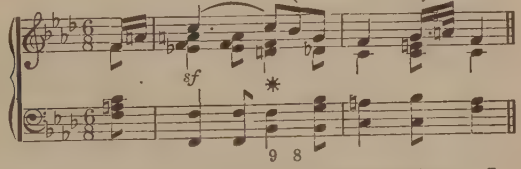


We have here some of the most frequently used suspensions. At the first crotchet of the bar is 4 3, at the second and third, 7 6 (the first inversion of the suspension 9 8). There is no suspension at the last crotchet of the first bar, because the quaver C is a note of the harmony. The second crotchet of the second bar shows the somewhat rare and always ambiguous (§ 346) suspension 6 5.

354. Our next illustration—

SCHUBERT. Rosamunde.

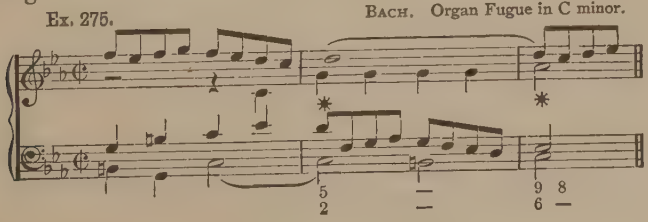
Ex. 274.



shows the root position of the 9 8 suspension. In the following—

Ex. 275.

BACH. Organ Fugue in C minor.

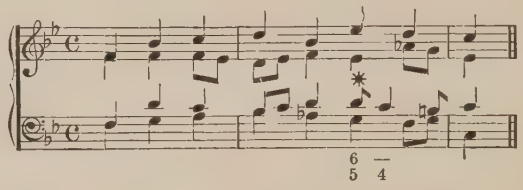


we see two inversions of the suspension 4 3; the last inversion in the second bar, and the first inversion in the third.

355. We shall now see the two suspensions 9 8 and 4 3 in their second inversions.

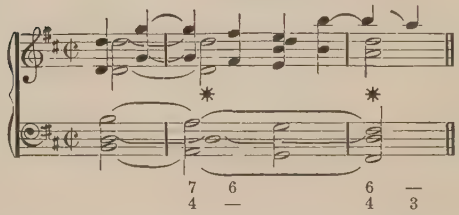
Mendelssohn. St. Paul.

Ex. 276.



Beethoven. Mass in D.

Ex. 277.

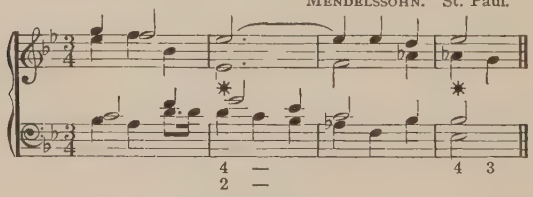


The chord ✳ in Ex. 276 is the second inversion of 9 8, as will be seen by reference to (*b*) Ex. 268. In Ex. 277 the third crotchet is the second inversion of 4 3—compare Ex. 269 (*b*). The last bar of this example also shows the rare first inversion of the suspension 6 5.

356. In the following example,

Mendelssohn. St. Paul.

Ex. 278.

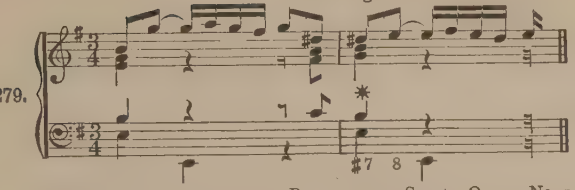


is seen in the second bar the last inversion of the suspension 9 8, the third and fifth of the chord being at a distance respectively of the second and fourth above the ninth. The root position of the suspension 4 3 will also be seen in the last bar.

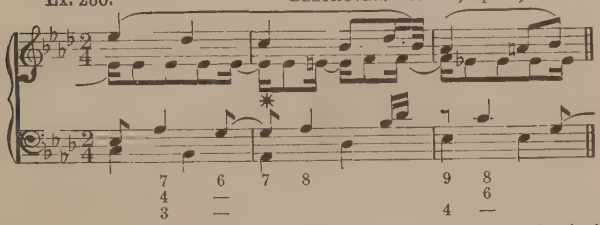
357. We now give examples of suspensions resolving upwards. Some theorists call these "Retardations"; but there seems no reason for giving a different name to them. By far the most common upward suspension is 7 8—the suspension of the root of a chord by the note below it.

BACH. Organ Prelude in E minor.

Ex. 279.



Ex. 280. BEETHOVEN. Sonata, Op. 10, No. 1.

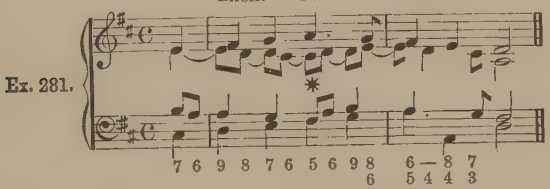


Ex. 279 is too simple to require explanation. Ex. 280 is interesting not only for the 7 8 in the second bar, but because in the first bar we see the second inversion of a 4 3 suspension resolving, not on a triad, as in previous examples, but on a chord of the dominant seventh. When we come to speak of chords of the eleventh (Chapter XIII,) it will be seen that this suspension might also be regarded as a second inversion of a dominant eleventh. With the higher discords (the elevenths and thirteenths,) we shall often find combinations which are capable of more than one explanation.

358. The two examples next to be given show the first inversion of the suspension 7 8.

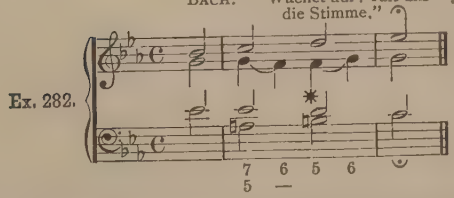
BACH. "Gott der Vater wohn'uns bei."

Ex. 281.



BACH. "Wachet auf! ruft uns die Stimme."

Ex. 282.



The first of these examples is very rich in suspensions; the student has already met with all of them excepting the one marked ✱.

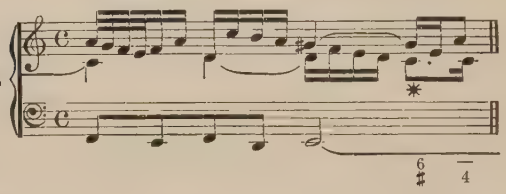
This at first sight looks like the triad on the mediant; that it is not so is proved by the preceding chord; for a second inversion of a dominant seventh never resolves on a mediant chord (see Chapter VIII). The C is therefore the suspension of the following D.

359. Ex. 282 is rather different. Here the root of the dominant chord, G, is suspended by a note a tone, instead of a semitone, below it. If we had here a chord of the seventh with an ornamental resolution, the F of the alto after rising to G would fall to E (§ 239).

360. The following examples show the other inversions of 7 8.

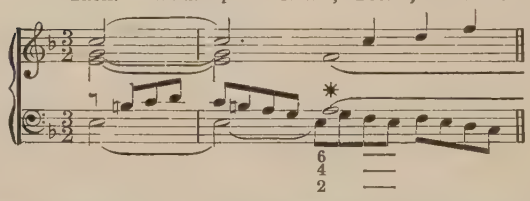
BACH. "Wohltemperirte Clavier," Book 2, Prelude 1.

Ex. 283.



BACH. "Wohltemperirte Clavier," Book 2, Prelude 11.

Ex. 284.



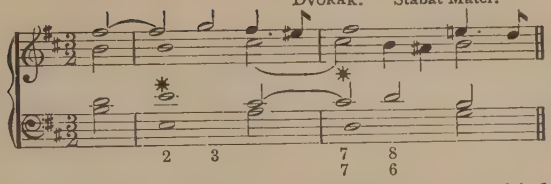
In the last crotchet of Ex. 283 the harmony is that of the chord of A minor in the second inversion, the leading note in the upper part being suspended under the root. The last inversion of the same suspension is shown at Ex. 284; and it will be observed that both the examples have ornamental resolutions.

361. Before leaving the 7 8 suspensions, we would refer the student to Ex. 230, in the first bar of which will be seen a series of them in their first inversion, 5 6. It has been already said that it is rare to find this suspension with any other note than the tonic.

362. Though the 7 8 is the most common of the upward suspensions, it is by no means the only one. It is not rare to find the suspension of a second under the third of a chord. Many examples of this might be quoted from Bach; but as all our last extracts have been taken from that composer, we select a more modern passage.

DVOŘÁK. "Stabat Mater."

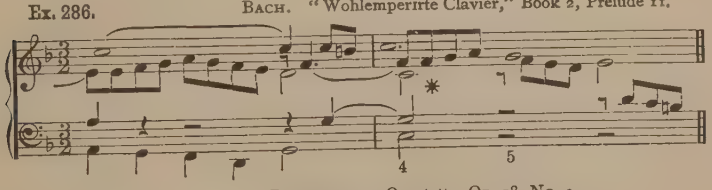
Ex. 285.



Here the second of the chord is suspended over the third. The last bar of this passage shows a very curious doubling of a suspension; the C is suspended both in alto and tenor, one part falling and the other rising to the note of the harmony.

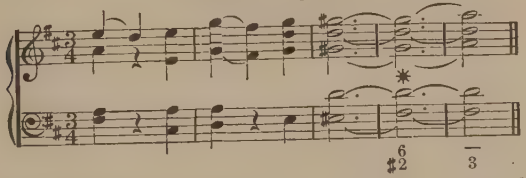
363. The upward suspension 4 5 is extremely rare in its root position, though somewhat more common in its first inversion, $\frac{6}{2}\ \frac{-}{3}$. We give one example of each.

Ex. 286. BACH. "Wohlemperirte Clavier," Book 2, Prelude 11.



BEETHOVEN. Quartette, Op. 18, No. 3.

Ex. 287.

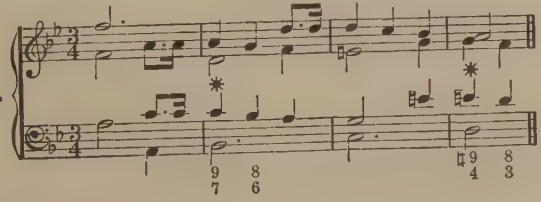


In both these examples the fifth of the tonic chord has the fourth suspended over it; in Ex. 286 the suspension is a tone, and in Ex. 287 a semitone below the harmony note.

364. Two or more notes of a chord may be suspended at the same time, or a whole chord may be suspended over the following one. If two notes are suspended, this is called a "Double Suspension"; if three or more are suspended, it is usually called the "Suspension of a complete chord."

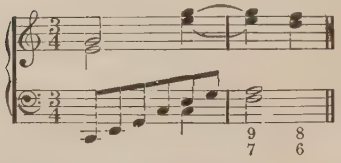
MENDELSSOHN. St. Paul.

Ex. 288.



CHERUBINI. Mass in C, No. 4.

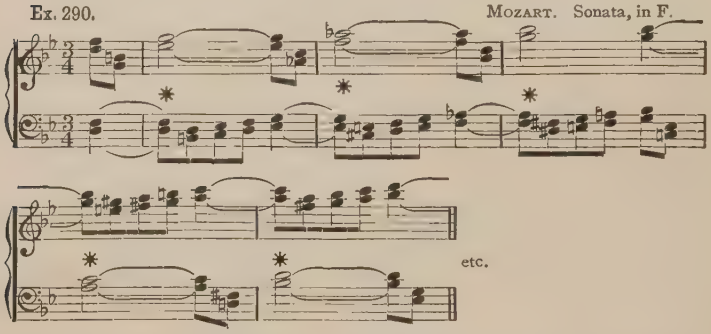
Ex. 289.



We see here examples of double suspensions, which will require no further explanation.

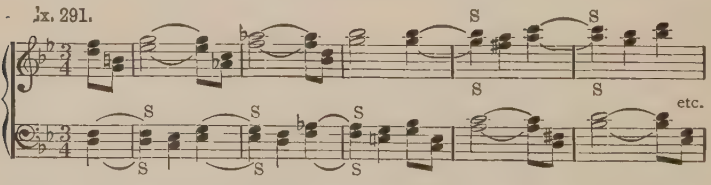
365. The following example is more intricate:—

Ex. 290. MOZART. Sonata, in F.



Here is a series of double suspensions, in every case with an ornamental resolution which is frequently chromatic. In the first three bars the two lower parts are suspended, and in the fourth and fifth bars the two upper parts. We have not figured the bass of this example, because no ordinary system of figured bass will apply to such unusual and chromatic progressions. It is of course *possible* to figure them, but the student would be more perplexed than assisted by the strange combinations which would be necessary. It will be remembered that unaccented auxiliary notes are seldom figured (§ 329). If we omit all these, we shall find that the harmonic framework of the passage is the following:—

Ex. 291.

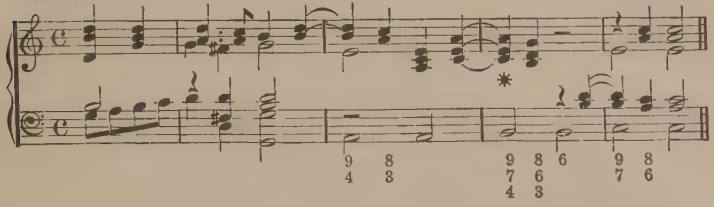


We have marked all the suspensions. The passage further affords a fine example of a sequence (§ 133).

366. We conclude this chapter by a few examples of the suspensions of complete chords. After the explanations already

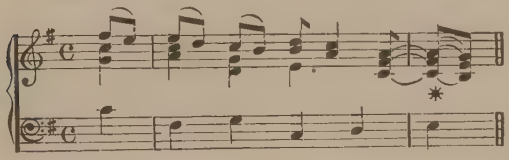
given, the student should have no difficulty in analyzing them for himself.

Ex. 292. HANDEL. Samson.

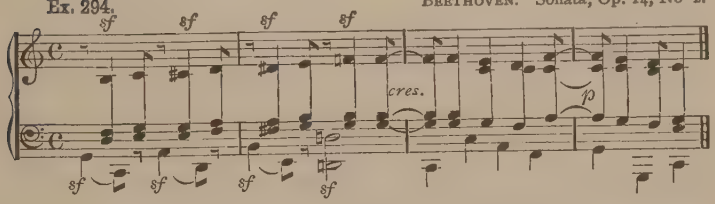


HELLER. "Promenades d'un Solitaire," Op. 78, No. 5.

Ex. 293.

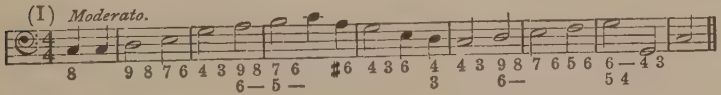


Ex. 294. BEETHOVEN. Sonata, Op. 14, No 2.

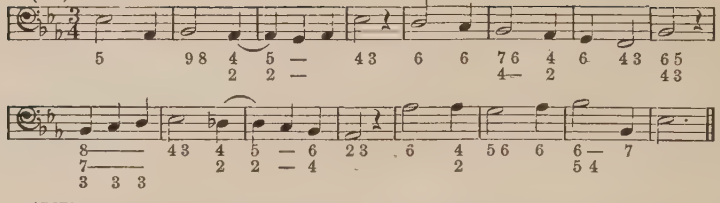


367. In working the exercises now to be given, the student is advised to mark his roots before commencing the writing of the upper parts. In cases of doubt, this will probably save him many mistakes. It may be well to remind him that when there is a suspension the root to be marked is that of *the chord on which the suspension resolves* (§ 337). When he has finished the exercises, he should harmonize melodies, introducing suspensions at his discretion. He will find chorals the most suitable for this purpose, and he should remember that it is possible to suspend either the root, the third, or the fifth of any chord; provided that it can move by step upwards or downwards to the next note of the harmony. It will be best for him to introduce suspensions that resolve upwards very sparingly.

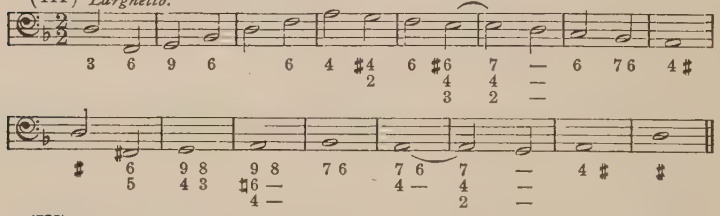
(I) *Moderato.*



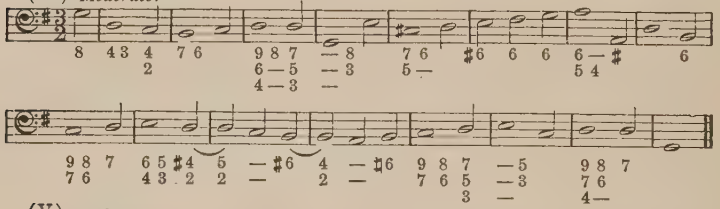
(II) *Andante.*



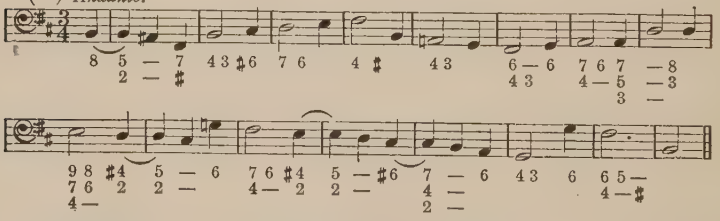
(III) *Larghetto.*



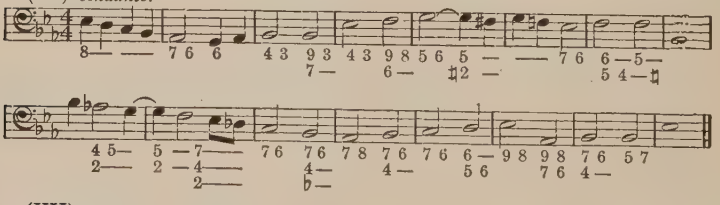
(IV) *Moderato.*



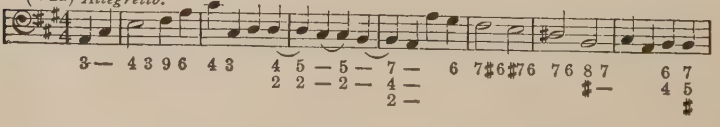
(V) *Andante.*

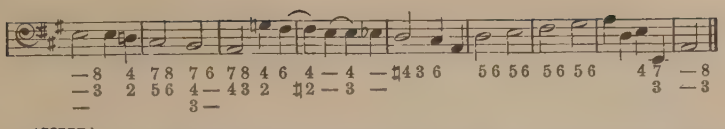


(VI) *Andante.*

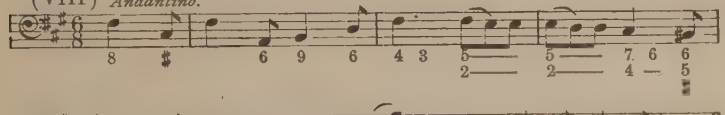


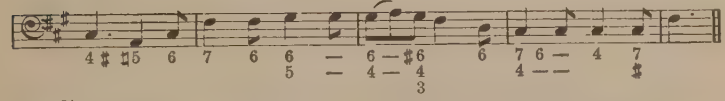
(VII) *Allegretto.*



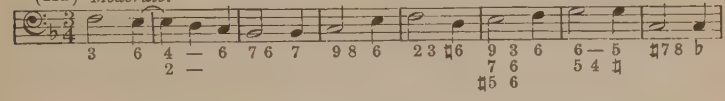


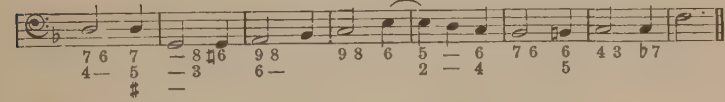
(VIII) *Andantino.*



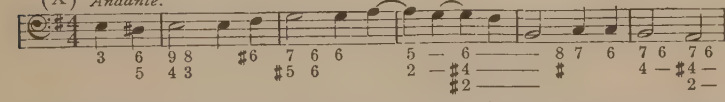


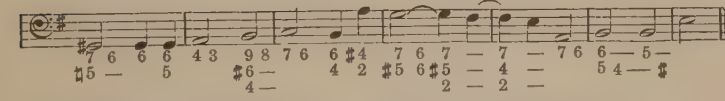
(IX) *Moderato.*



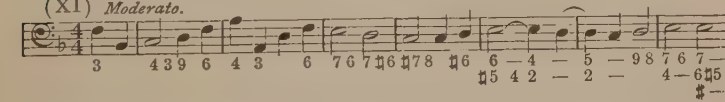


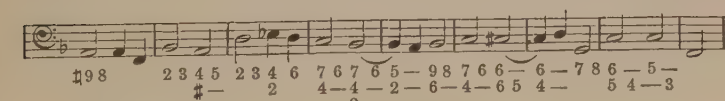
(X) *Andante.*



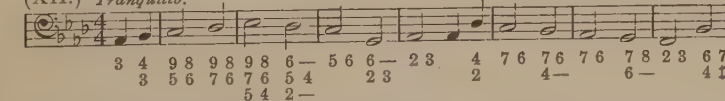


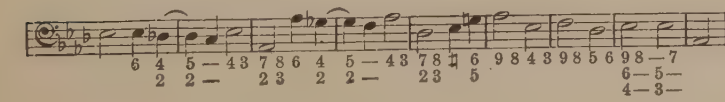
(XI) *Moderato.*



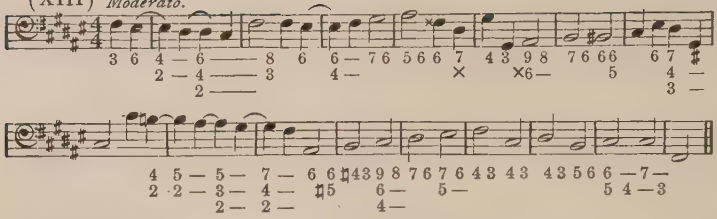


(XII.) *Tranquillo.*

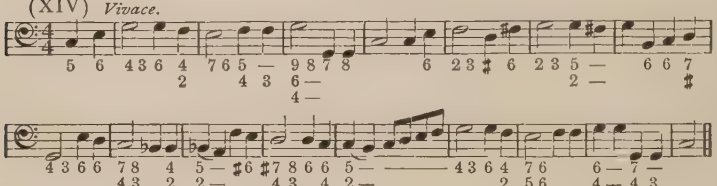




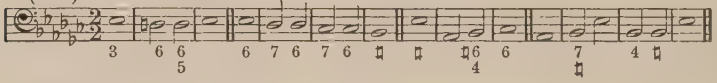
(XIII) *Moderato.*



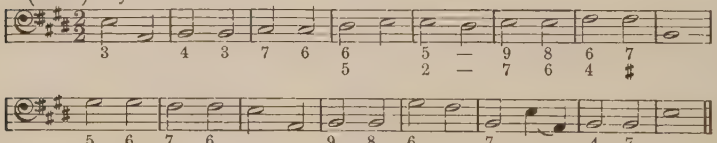
(XIV) *Vivace.*



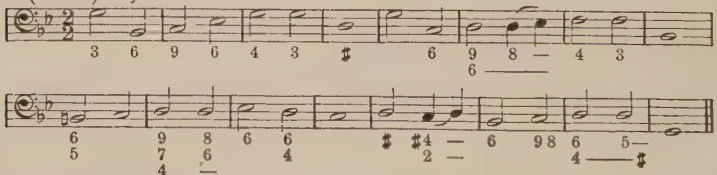
(XV) Double Chant.



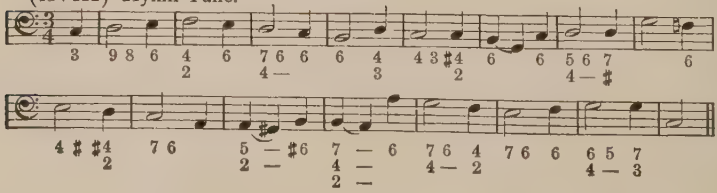
(XVI) Hymn Tune.



(XVII) Hymn Tune.



(XVIII) Hymn Tune.

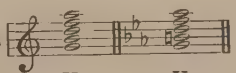


CHAPTER XII.

THE CHORD OF THE DOMINANT NINTH.

368. The student has already learned (§ 36,) that every chord is formed by the superposition of thirds, either major or minor, one above another.* If to the fundamental chord of the dominant seventh, dealt with in Chapter VIII, we add another third, this new note will evidently be at the distance of a ninth above the root, and the chord thus obtained will be a chord of the dominant ninth. We know that a chord of the dominant seventh is the same in major and minor keys; but, as the ninth above the dominant is the sixth of the scale—one of the two notes differentiating the major from the minor key—it is clear that we shall have a chord of the major ninth in a major, and of a minor ninth in a minor key.

Ex. 295.



C: V9 c: V9

A chord of the ninth is marked V9, just as a chord of the seventh is indicated by V7.

369. The addition of a new note at the top of a chord does not affect the progression of the lower notes, though its own progression will be largely affected by them. The rules for the treatment of chords of the seventh given in Chapter VIII are therefore still to be observed, and the only new rules to be learned will refer to the ninth itself.

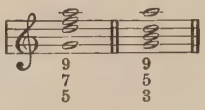
370. It will be seen that a chord of the ninth contains five notes. As most music is written in four parts, one note must evidently be omitted. The seventh is almost always either present in the chord, or, if not, it is added when the ninth is resolved. (See example 302 later in this chapter.) In the root position, it is generally the fifth of the chord that is omitted; but if the root be not in the bass, it is seldom present at all. Inversions of the chord of the ninth are therefore very rare; but its derivatives (§ 252,) are more common than the root position of the chord itself.

371. The chord of the dominant ninth in root position will be figured $\frac{9}{7}$ in a major key, and $\frac{9}{7}$ in a minor key. If no further

* The only exception to this rule is the chord of the augmented sixth, which will be treated of in Chapter XIX.

indication is given, the seventh and third should be added; if either the seventh or third is to be omitted, and the fifth introduced instead (which rarely happens), this had better be shown in the figuring, thus,—

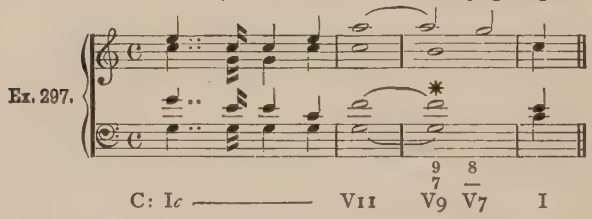
Ex. 296.



372. Unlike a chord of the dominant seventh, a chord of the ninth can, and frequently does, resolve upon its own root. In that case the ninth mostly resolves before the rest of the chord, and the root position of the dominant seventh remains. The ninth may proceed to any other note of the chord; but by far the commonest progression is to either the root or the third. We first give examples of these.

MENDELSSOHN. First Walpurgis Night.

Ex. 297.

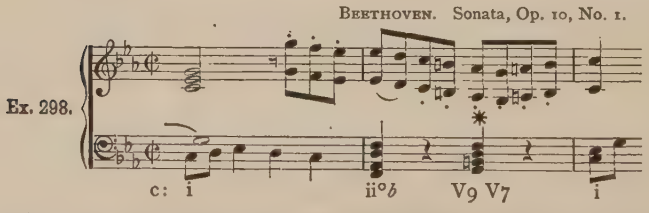


The chord in the second bar of this passage, is, as we shall see in the next chapter, a dominant eleventh. The first minim of the third bar is a dominant major ninth; the ninth falls to its root, and V7 remains. In such a case, the figuring of the chord should be as here shown.

373. We next show the minor ninth resolving on its root:—

BEETHOVEN. Sonata, Op. 10, No. 1.

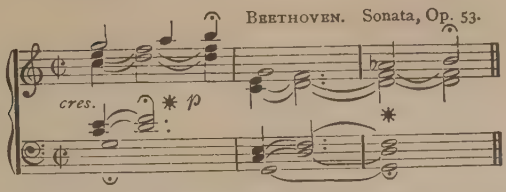
Ex. 298.



With the help of the analysis, the student will easily be able to distinguish the passing and auxiliary notes. As this piece is for the piano, in which there is no restriction as to four parts, the chord of the ninth at * appears in its complete form. Observe that A ♮ in the second bar is a passing note (§ 317.)

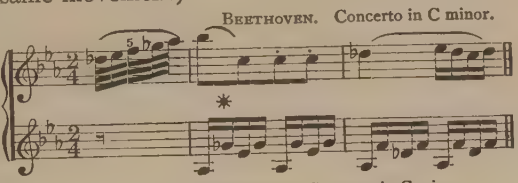
374. If the ninth, instead of proceeding to the root, go to the third of the chord, it may either rise a second or fall a seventh.

Ex. 299.

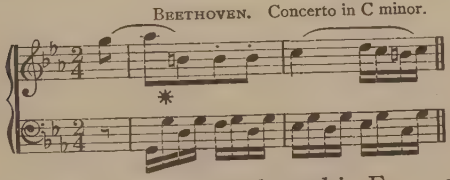


In the first bar of this passage the major ninth rises a tone, and in the second bar the minor ninth rises an augmented second, to the third of the chord. In our next two examples, both taken from the same movement,

Ex. 300.



Ex. 301.

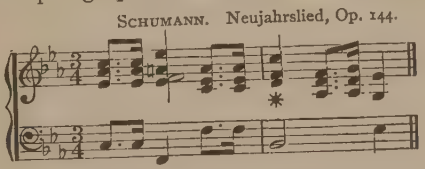


is seen in Ex. 300 the major ninth, and in Ex. 301 the minor ninth, falling a seventh to the leading note.

375. It was said in § 370 that in the root position of this chord the fifth was generally omitted. But in all the examples just given the third is omitted. This is always the case when the ninth resolves on the third, in accordance with a broad general principle that *the note on which a dissonance resolves should not be sounded with that dissonance, excepting only the root with the ninth, which is always allowed.*

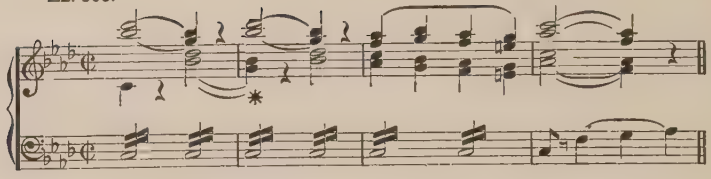
376. The resolutions of the ninth on the fifth and on the seventh of the same chord are much rarer, and may be called irregular resolutions. In these, therefore, we find that the rule given in the last paragraph is not always strictly enforced.

Ex. 302.



Here at the * we see the dominant major ninth, resolving by a leap to the fifth of the chord; the seventh only appears when the ninth is resolved (§ 370).

Ex. 303. SCHUBERT. Fierrabras.

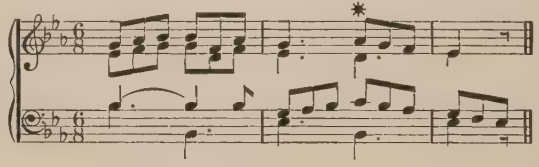


The second bar of this passage shows in the upper part the ninth resolved on the seventh. At the moment of resolution the ninth is taken by another part; the passage therefore has some analogy with the change in position of the dominant seventh, spoken of in § 266. We recommend the student to restrict himself to the resolutions on the root and third of the chord.

377. As the major ninth if placed below the third of the chord will be a major second below that note, it will frequently sound harsh in that position. It is therefore generally better to put the ninth above the third. But to this rule there is one exception of some importance. A dominant major ninth can always be placed immediately below the third, provided that the ninth proceed direct to the generator while the third remains stationary, as in the following example:—

DVOŘÁK. Stabat Mater.

Ex. 304.



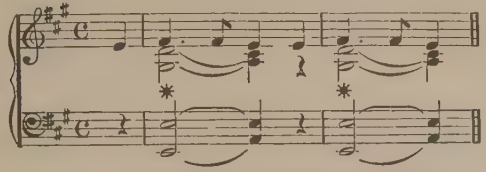
Between the first and second bars of the above will be seen in the soprano and tenor parts hidden octaves of a kind that are specially prohibited (§ 76). The infraction of the rule here is palliated, if not justified, by the tenor in the first half of the second bar imitating the first half of the soprano of the previous bar.

378. The general rule illustrated in the above example may be thus stated: *The major ninth should only appear below the third when the chord resolves upon its own root.*

379. When a chord of the dominant ninth does not resolve upon its own root, it will resolve either on the tonic chord, or on a chord belonging to another key. If it resolve on the tonic chord, the ninth falls one degree to the fifth of the chord, while the third and seventh move as in the resolution of the dominant seventh. The following examples show both the major and the minor ninth thus treated:—

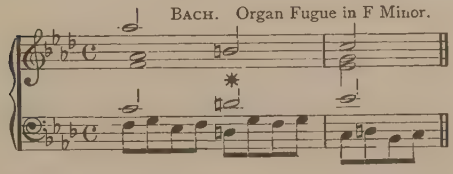
Schumann. "An den Sonnenschein," Op. 36, No. 4.

Ex. 305.



Bach. Organ Fugue in F Minor.

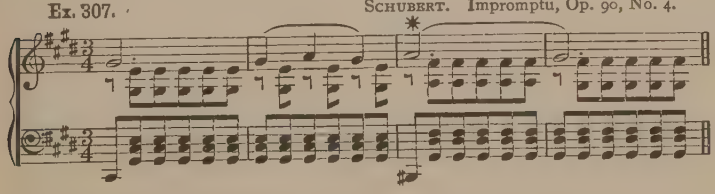
Ex. 306.



380. When the fifth is present in a chord of the dominant major ninth, and is below the ninth, it must rise to the third of the tonic chord in the resolution, to avoid consecutive fifths. Though seldom found in the root position, this progression will often occur in the derivatives. We shall see an example shortly.

381. It was said in § 370 that inversions of the chord of the ninth are extremely rare. They are, however, somewhat more frequently to be met with when the ninth resolves by rising to the third. (See Exercises I and V at the end of this chapter). When the root is found in any other part than the bass, it will generally have the character of a dominant pedal (Chapter XX),—that is, of a dominant held through harmony of which it is not necessarily a part. We give two examples.

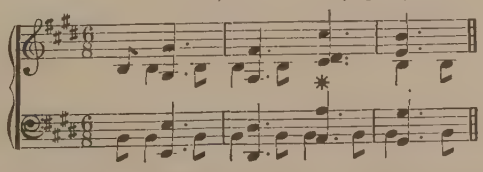
Ex. 307. Schubert. Impromptu, Op. 90, No. 4.



Here is the first inversion of the dominant minor ninth, with all its notes present. The student must remember that the C♯ and B♯ in the bass are the real bass of the harmony.

Heller; Dans les bois, Op. 86, No. 3.

Ex. 308.

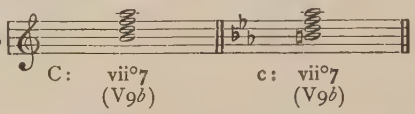


This extract shows the third inversion of the dominant major

ninth. In Ex. 307 the ninth resolved upon its own root; here it resolves upon the tonic chord.

382. The derivatives of the dominant ninth, especially of the minor ninth, are of great importance. In Chapter VIII we saw derivatives of the dominant seventh, and it was pointed out (§ 252) that when the dominant (the *generator* of the chord,) was no longer present, the lowest note actually present became the root. If in chords of the ninth the dominant be omitted, there will remain a chord of the seventh upon the leading note.

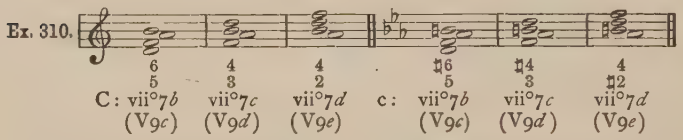
Ex. 309.



As explained in § 253, we indicate the harmonic derivation of the chords in brackets. This derivative is figured 7, like a chord of the dominant seventh, from which it is easily distinguished by the nature of the intervals above the root.

383. We now give the inversions of this chord.

Ex. 310.



It will be seen that the figuring of these inversions is identical with those of the inversions of the dominant seventh. But there will be no confusion in the student's mind if he will remember that the smallest even number shows the root of the chord (§ 174). He will find B to be the root in every case; and as this note has a minor third above it, the chord cannot be a fundamental chord (§ 232). Consequently B, though the root, is not the generator; and these chords are all derivatives.

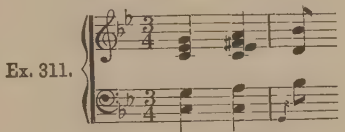
384. The chord vii°7 in a major key, with a *major* ninth above the generator, is sometimes called the "chord of the seventh on the leading note," or, more concisely, the "chord of the Leading Seventh"; in a minor key, because of the interval between the root and the seventh (the original *minor* ninth,) the chord is known as the "Diminished Seventh." The full importance of the latter chord will be seen when we come to treat of chromatic discords.

385. In the resolution of these derivatives, the ninth (now become a seventh,) must fall one degree. It cannot now rise a degree, as in the root position, because the leading note, to which it would rise, is present in the chord (§ 375). The omission of the generator frees the fifth of the chord (the orig-

inal seventh,) in the inversions, just as is the case in the first inversion of the diminished triad (§ 261); and the rules given for vii°*b* apply also to vii°7*b*. But in the second inversion of this chord (vii°7*c*,) it is not uncommon for the bass, instead of moving by step, to leap a fourth downwards to the tonic, as in the following:—

Schumann. Kreisleriana, Op. 16. No. 5.

Ex. 311.

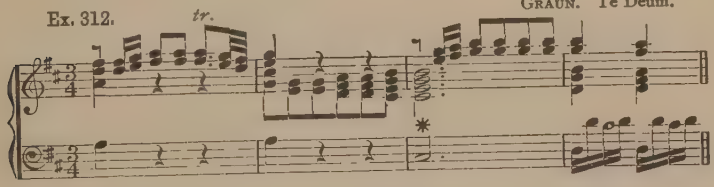


g: iv vii°7*c* i
(V9*d*)

386. We now give some examples of vii°7, both in major and minor keys, and in various positions. To save space, we shall no longer mark the roots under the examples; the student should be quite able to do this for himself. We first show the chord in root position.

Graun. Te Deum.

Ex. 312.

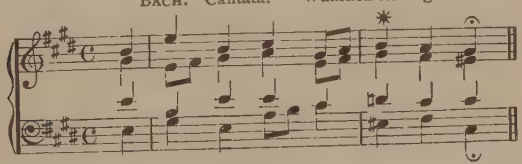


In the third bar we have the chord vii°7; its resolution is interesting, because two explanations are possible. We may consider the chord as resolved on IV*c*; but we may also regard the B and G as accented auxiliary notes introduced before the tonic chord, to save the fifths which would otherwise occur when E descended to D (§ 380).

387. Our next examples show the chord in a minor key.

Bach. Cantata.—"Wahrlich ich sage Euch."

Ex. 313.

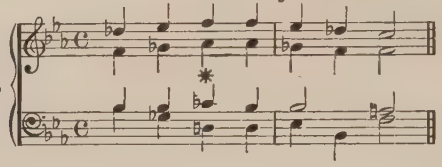


This passage begins in E major; at the first crotchet of the last bar a modulation to F sharp minor is made by sharpening the tonic of E for the new leading note; the vii°7 in the latter key

is resolved upon the tonic chord. In the following passage,

BACH. Johannes Passion.

Ex. 314.

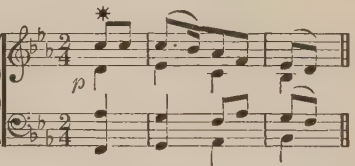


which is in B flat minor, we see the chord of the diminished seventh (vii°7) of E flat minor, taken as a transitional dominant (§ 295,) and resolved on its own root. We regard both this and the following chord as transitional dominants, because they are both dominant chords of E flat minor, and have the same generator.

388. In the following passages will be seen, the first (Ex. 315,) and second (Ex. 316,) inversions of the chord vii°7.

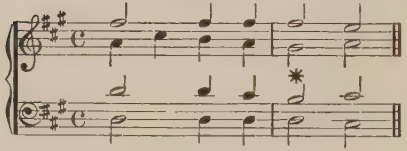
MENDELSSOHN. Variations, Op. 82.

Ex. 315.



MENDELSSOHN. St. Paul.

Ex. 316.

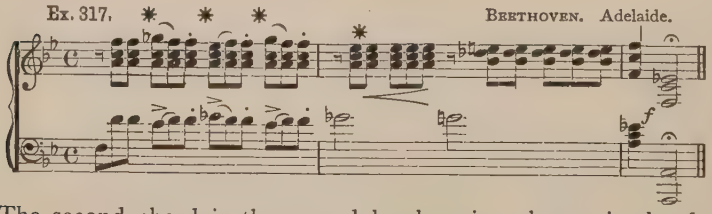


In both these examples the resolution is on I*b;* in Ex. 315 the B is delayed by an accented auxiliary note.

389. Both second and third inversions are shown in the following:—

Ex. 317.

BEETHOVEN. Adelaide.

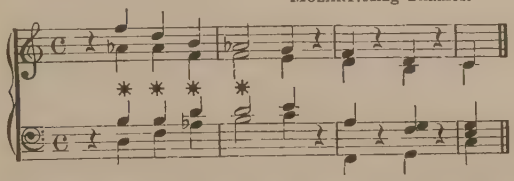


The second chord in the second bar here is a chromatic chord, which will be explained later. It is unusual for a diminished seventh to resolve, as here, upon a dominant triad; its resolution on a dominant seventh is the more frequent.

390. Like the chord of the dominant seventh (§ 266), the chords of the dominant ninth, and especially their derivatives, can change their position, being resolved in the position in which they last appear. The following passage shows all the positions of the chord of the diminished seventh, here used chromatically in a major key (§ 510).

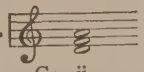
Mozart. King Thamos.

Ex. 318.



391. If both root and third are omitted in the chord of the dominant *major* ninth, the remaining notes (the fifth, seventh, and ninth) form the diatonic chord on the supertonic of the major key.

Ex. 319.

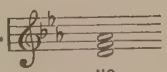


C: ii

This chord is now a concord; for the root and third are the only notes with which the seventh and ninth are dissonant, and *in considering the progression of the upper notes of a fundamental chord, only such notes are to be taken into account as are actually present in the chord.* We shall see this principle more fully illustrated when we come to chords of the eleventh and thirteenth. As the chord is a common chord, we take no account of its harmonic origin, and do not mark it as a derivative.

392. If the root and third are omitted in the chord of the dominant *minor* ninth, we shall have the supertonic triad of the minor key.

Ex. 320.



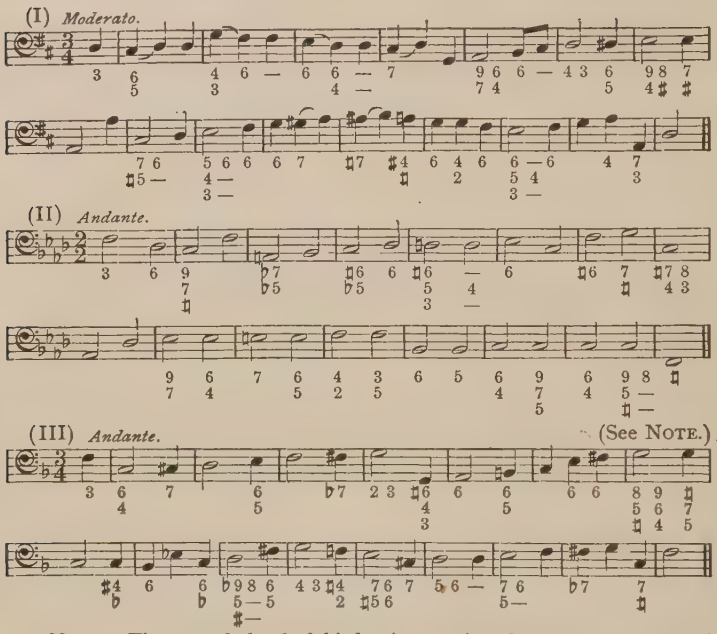
c: ii°

This chord, it will be remembered, is, like vii°, a diminished triad, and a derivative of V9*c*. Its first inversion, ii°*b*, is a derivative of V9*d*. As it is a dissonant chord, we shall in future mark it as a derivative, thus— ii°, ii°*b*.

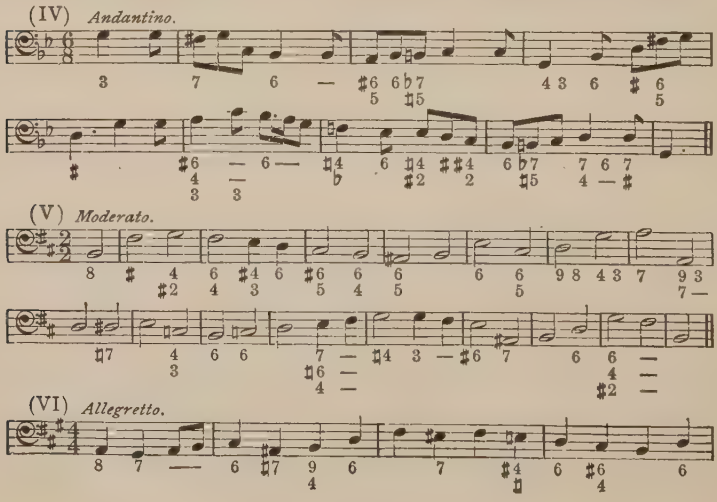
(V9*c*) (V9*d*).

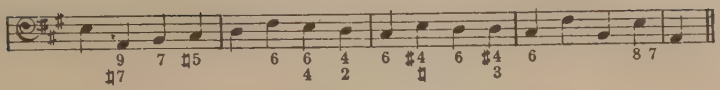
393. The chord of the diminished seventh, the chief derivative of the chord of the ninth, and its most frequently used form, is more often employed chromatically than diatonically. We shall therefore reserve the greater part of the exercises on the ninths till in Chapter XVII we deal with the chromatic ninths. A few exercises on their diatonic treatment are all that will

be needed here. In many cases the diminished sevenths are introduced as transitional dominants.

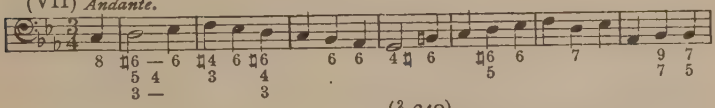


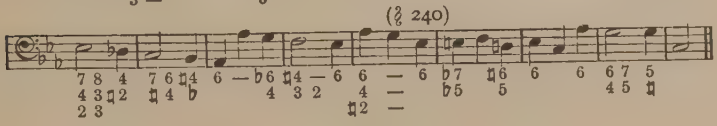
NOTE.—The second chord of this bar is a passing chord; and the unusual order of the figures in the third crotchet shows the progression of each part.



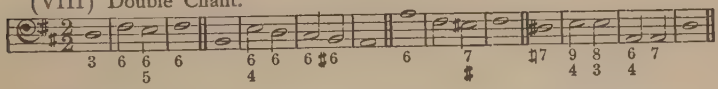


(VII) *Andante.*

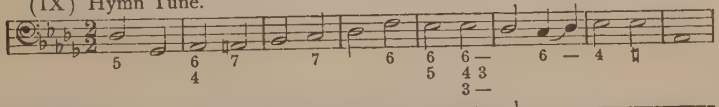


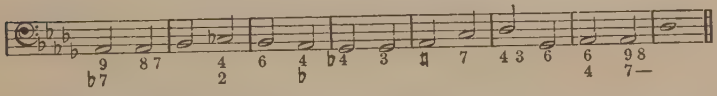


(VIII) Double Chant.

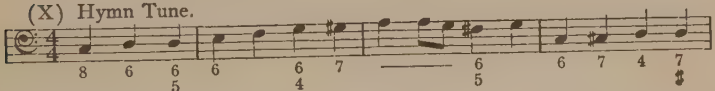


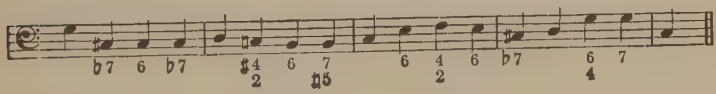
(IX) Hymn Tune.





(X) Hymn Tune.



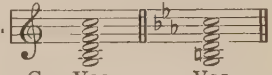


CHAPTER XIII.

THE CHORD OF THE DOMINANT ELEVENTH.

394. If above the chord of the ninth, spoken of in the last chapter, another third be added, this will be at the distance of an eleventh from the root, and we have a chord of the dominant eleventh. The new note, being the tonic, will be the same in major and minor keys; but the ninth of the chord, if present, will be major or minor according to the key.

Ex. 321.

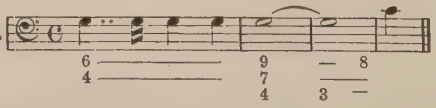


395. It will be noticed that the eleventh is the octave of the fourth, and we shall see directly that it is frequently figured 4. But the two notes are really quite different; for a fourth is either the inversion of a fifth (§ 172,) or a suspension (§ 344). It is by its treatment that we distinguish between an eleventh and a fourth.

396. The chord of the eleventh in its complete form contains six notes; it will therefore be necessary in four-part writing to omit at least two of these notes. As the eleventh is a dissonance, the usual resolution of which is by descent of a second, the third is mostly omitted in accordance with the general principle given in § 375. Either the fifth or ninth of the chord is also generally omitted; but the seventh is usually present, though occasionally this note is only added when the eleventh is resolved, as in Ex. 212, at the last chord of the second bar.

397. Unlike the ninth, which seldom appears at a less distance than a ninth from its generator—never, indeed, excepting occasionally when it is resolved on its third—the eleventh may, and often does, occur at the interval of a fourth above its generator. It is sometimes figured 11, but more frequently 4, and the remaining figures of the harmony indicate the true nature of the chord. As an instance of this, let the student refer to Ex. 297, where the chord in the second bar is a dominant eleventh in its root position with the 7th and 9th. The bass would be figured thus:—

Ex. 322.



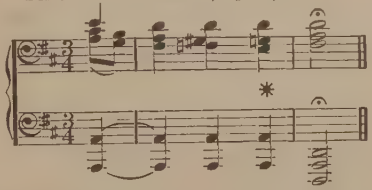
It has been already said that in figuring a chord the largest numbers are generally placed at the top.

398. This passage illustrates a point that is worthy of notice. When the higher discords (ninths, elevenths, or thirteenths,) resolve, as here, on their own roots, the discord often resolves gradually, beginning with the highest interval. Here, the eleventh descends to the third, at the third bar, leaving a chord of the ninth; the ninth resolves on the root, a minim later, leaving a chord of the seventh, which revolves on the tonic chord in the next bar. Such cases are of frequent occurrence.

399. Like the dominant ninth, the chord of the eleventh may resolve either on its own root—by which it is not meant that the eleventh leaps to the root, but only that it resolves on another dominant chord, usually a seventh or ninth—or it may resolve on a different root. The latter seldom occurs if the root be present in the chord of the eleventh; though even then it is possible to resolve it on a tonic chord, as in the following passage:—

Schumann. Novellette, Op. 21, No. 8.

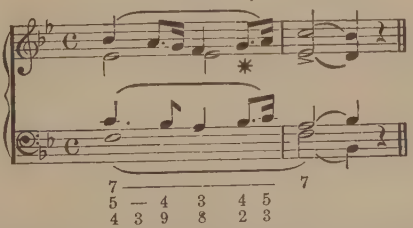
Ex. 323.



Here the third chord from the end is a supertonic minor ninth, which will be explained later (Chapter XVII), the A in the bass being a dominant pedal (§ 381); the chord * is a dominant eleventh, with the third and ninth omitted. In this case the eleventh remains to be a note of the following chord. When the eleventh moves, it will go either one degree down, to the third, or one degree up, to the fifth of the chord. When in the root position of this chord the eleventh rises to the fifth, the ninth is usually also present, and rises to the third as below. (See also Exercise XI, at the end of the chapter, at the third bar.)

Weber. Duet, "Se il mio ben."

Ex. 324.



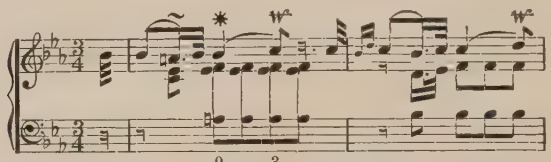
400. The chord of the eleventh, as it contains six notes, can of course have five inversions, which, in marking the roots, we indicate by the letters *b*, *c*, *d*, *e*, *f*. But of these only the

second inversion (V11*c*,) is often used, though the derivatives of other inversions are very frequently met with, and some are of great importance. We first give a few examples of inversions.

401. Owing to the harsh dissonance of the eleventh against the third, the first inversion of this chord is very rare. We give one example.

C. P. E. BACH. Fantasia in C minor.

Ex. 325.



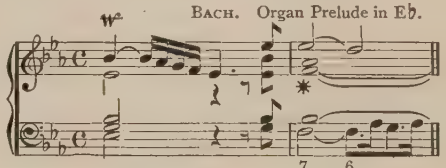
B♭: V11*b* V7*b*

The eleventh here has much of the effect of an accented auxiliary note; but if it were, the B should be natural (§ 307). It is probable nevertheless that the composer so regarded it, as auxiliary notes a tone below the harmony note were not unusual in the middle of the eighteenth century.

402. The second inversion of this chord is much more common than the first. In the following example,

BACH. Organ Prelude in E♭.

Ex. 326.



E♭: V11*c* V7*c*

the root, fifth, seventh and eleventh of the chord are present, the eleventh resolving on the third. Observe the figuring, and remember that the figuring of any chord does not necessarily show its nature, but merely indicates the distance of the upper notes from the bass.

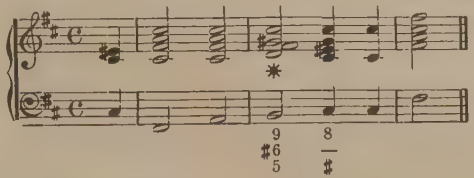
403. In Chapter XI it was said (§ 357,) that with the higher discords combinations were often found that were capable of more than one explanation. The present is a case in point. In the first bar of Ex. 280 will be seen a suspension bearing the same figuring, and containing the same intervals as the chord shown above. Our present example cannot be regarded as a suspension; for its preparation is too short. If the preceding chord were a minim, it could be explained in either way. It would also be possible to consider the E in the second bar here as an accented auxiliary note; but its harmonic importance

makes it better here to look at the chord as a genuine chord of the eleventh.

404. The third inversion of this chord is so rare that we are unable to give an example of it. In the following, which at first sight looks like an example,

Schubert. Rosamunde.

Ex. 327.

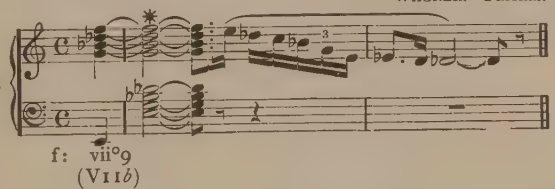


the root is clearly treated as a *pedal* note above the other parts; for if Schubert had looked upon the note as a part of the chord, the B in the bass would have fallen, instead of rising. The chord is therefore in reality a *derivative* (as we shall see presently,) of the dominant eleventh below an inverted pedal. The fourth and fifth inversions are also very seldom met with.

405. The derivative of the first inversion is as rare as the inversion itself, and for the same reason—the harshness of its dissonance. We quote a passage in which this very harshness is introduced for a special dramatic effect.

Wagner. Parsifal.

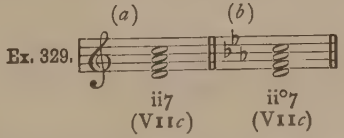
Ex. 328.



Here the ninth (the eleventh from the generator,) instead of rising, as in Ex. 325, falls a semitone, and we have a doubled leading note. Such violations of rule are sometimes to be found in the works of the great masters, employed, as here, for a special purpose; but the student is not advised to imitate them. The E♭ and D at the beginning of the last bar are chromatic passing notes.

406. The derivative of the second inversion of the chord of the eleventh is much more important, and more frequently used. It gives a chord of the seventh on the supertonic.

Ex. 329.

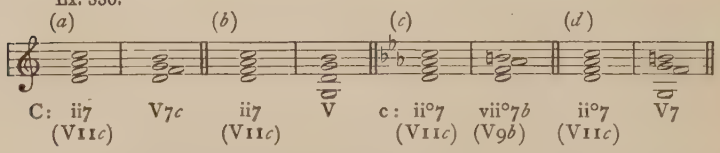


This chord has a perfect fifth in a major, and a diminished fifth

in a minor key. It must be remembered that, though the dominant is still the *generator*, the supertonic has now become the root (§ 252). The chord is simply figured 7, like a chord of the dominant seventh, or the leading seventh (§ 384). In a major key, the only dissonant note is the seventh; the fifth, being perfect, is free in its progression; but in a minor key both fifth and seventh are dissonant.

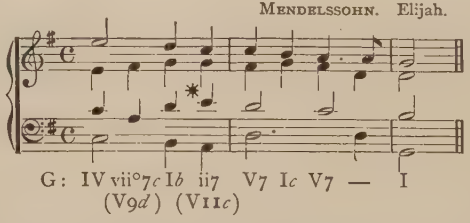
407. This chord can be resolved upon either a dominant or a tonic chord. In the former case, the seventh (the original eleventh,) falls one degree to the leading note, and the root of the chord either remains stationary, or leaps a fourth or fifth to the dominant.

Ex. 330.



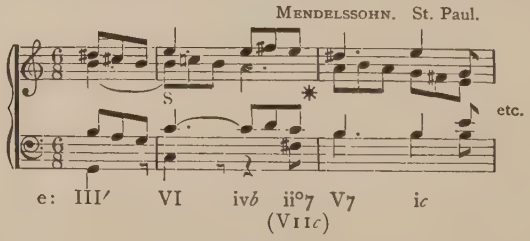
At (*a*) (*b*) and (*d*) the fifth of the chord (the ninth of the dominant,) falls a second; at (*c*) it remains to be resolved later. When in ii7 or ii°7 the seventh falls, the following chord can be either V, V7 or vii°7. We give two examples of this resolution.

Ex. 331.



Here the chord is resolved on the root position of the dominant seventh. Our next extract shows the chord in a minor key.

Ex. 332.

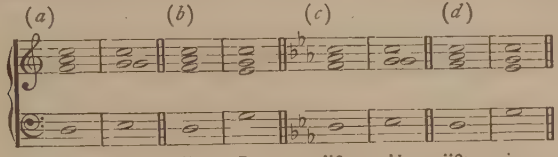


We here see the chord resolved in the same way as in the preceding example; but it is differently approached.

408. If this derivative be resolved on the tonic chord, the

latter must not be in root-position (see § 195), but may be either in the first or second inversion. In this case, the seventh remains as the root of the tonic chord (Compare Ex. 323).

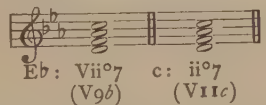
Ex. 333.



The progressions at (*b*) and (*d*) are by no means uncommon in approaching a cadence; an example will be seen in Chapter VI, Ex. 121. Note that the third rule given in § 188 for approaching a second inversion is not broken here, as the chord ii7 is not an inversion of another chord, but only *the derivative of an inversion.*

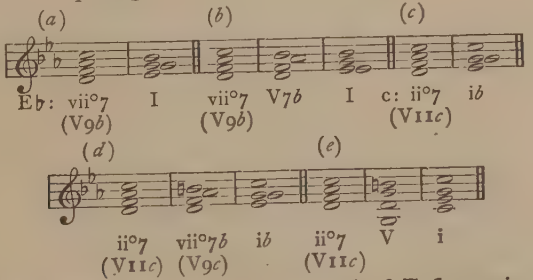
409. In the last chapter it was pointed out (§ 382,) that a derivative chord of the seventh could be distinguished from a dominant seventh by the nature of its intervals. But if we compare the two derivative sevenths, vii°7 in a major key (the "Leading seventh,") and ii°7 in a minor key, we shall find that their intervals are identical, *e.g.*—

Ex. 334.



In order to be sure of the nature of the chord in such a case as this, it will be necessary to *look at its resolution.* It must be remembered that a derivative of a dominant discord, if resolved on a tonic chord, will define a key as surely as the dominant seventh itself (§ 241). In the absence of proof to the contrary—we shall see directly what this means—the common chord on which the discord resolves will be the tonic chord of the key of the passage. Let us apply this test.

Ex. 335.

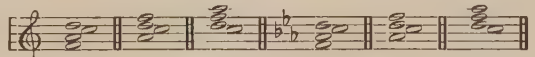


At (*a*) the chord resolves on the chord of E flat major, and at

(*b*) on the dominant seventh of the same key, which is followed by the tonic chord. Both these passages are therefore in E flat major. But at (*c*) the same chord is followed by the first inversion of the chord of C minor, and at (*d*) by the chord of the diminished seventh in the same key. At (*e*) the chord is followed by the common chord of G. But here we have the proof, referred to above, that the chord is not a tonic chord; for its root, G, is approached *by a semitone from above;* and the note above a tonic is always a tone above it, both in major and minor keys. Even if the A were natural, as in Ex. 329 (*a*), G could still not be a tonic, because it is approached *by a tone from below.* The G is a dominant here; and the key, as at (*c*) and (*d*), is C minor.

410. The three inversions of ii7 will evidently be the derivatives of the third, fourth, and fifth inversions of the chord of the eleventh.

Ex. 336.



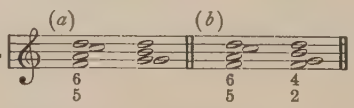
C: ii7*b* ii7*c* ii7*d* c: ii°7*b* ii°7*c* ii°7*d*
(V11*d*) (V11*e*) (V11*f*) (V11*d*) (V11*e*) (V11*f*)

Of these, the first inversion, ii7*b*, is by far the most important, and is one of the most frequently used of all the derivatives of chords of the eleventh.

411. It will be seen that the bass of this chord is the subdominant; from the fact that the notes which it contains are those of the subdominant chord with the addition of a sixth above the bass, the chord in this position is commonly known as the "Chord of the Added Sixth." It can resolve either on a dominant or on a tonic chord; as the progressions will be the same in a major and minor key, it will suffice to give them in the former.

412. If ii7*b* resolve upon a dominant chord, the latter will be generally in root position, as at (*a*) below.

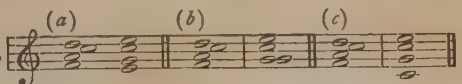
Ex. 337.



Here the root of the chord remains stationary, the third (the bass), rises one degree, and the fifth and seventh each fall one degree. It is also possible to resolve it on V7*d*, as at (*b*); in this case both root and third are stationary, the fifth and seventh moving as before.

413. If ii7*b* resolve on a tonic chord, *any* position is possible for the latter.

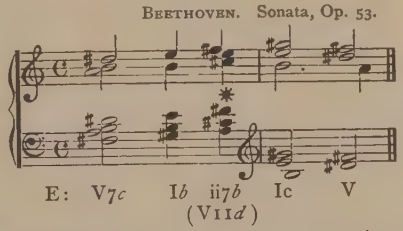
Ex. 338.



The seventh is now stationary (compare Ex. 333); and the other parts move by step, except at (*c*) where the bass note (the seventh of the dominant,) leaps to the tonic, just as we saw it in the last chapter (§ 385) in the derivative of the third inversion of the dominant ninth.

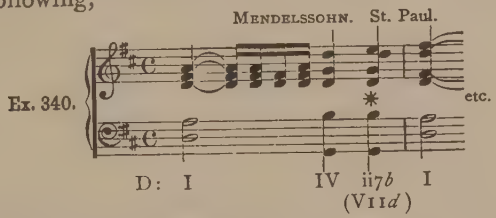
414. The chord ii7*b*, when it resolves on a dominant chord, is often used as the antepenultimate chord in a cadence. In Exs. 122 and 186 it will be seen thus employed. In Ex. 121, in the last bar but one, it is resolved on vi*c*, here treated as a passing chord between two positions of ii7. In Ex. 178 we find the chord (ii°7*b*) in a minor key. We now give two examples in which it resolves on the tonic chord.

Ex. 339.



Here the chord resolves on the second inversion of the tonic. In the following,

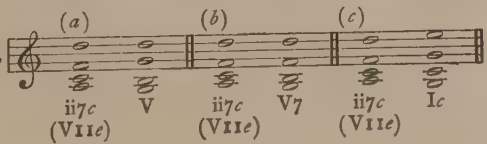
Ex. 340.



it resolves on the root position of the tonic, as in Ex. 338 (*c*).

415. The second and third inversions of ii7 (the derivatives of VII*e* and VII*f*,) are much less common than ii7*b*. As the notes have the same progressions as in the positions already described, it will be only needful to catalogue them here, and to give a few examples of their employment. As in other positions, their treatment is the same in major and minor keys.

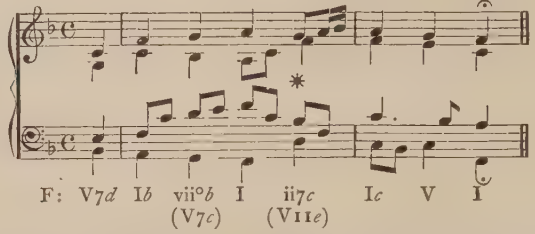
Ex. 341.



The resolution at (*c*) is the most common in this position. We give two examples, one in a major, and one in a minor key.

BACH. Matthäus-Passion.

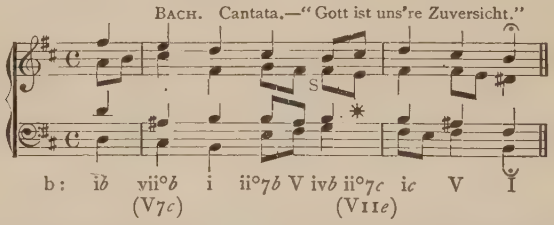
Ex. 342.



We leave it to the student to discover the passing and auxiliary notes in this passage. If he has carefully studied Chapter X of this volume, he will find no difficulty here. In our next illustration, which is also by Bach, ii7*c* has the character of a passing chord.

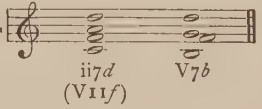
BACH. Cantata.—"Gott ist uns're Zuversicht."

Ex. 343.



416. The last inversion (ii7*d*,) is very rarely resolved otherwise than on its own generator.

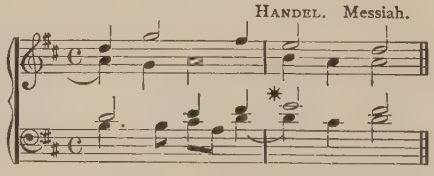
Ex. 344.



We give two examples.—

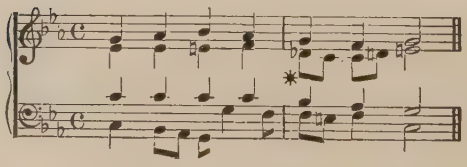
HANDEL. Messiah.

Ex. 345.



BACH. Cantata.—"Sehet, wir gehen hinauf."

Ex. 346.

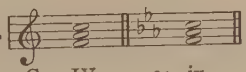


We give no analysis of these passages, because it will be very beneficial to the student to make his own.

417. The figuring of the chord ii7 in its various positions will, like that of vii°7 (§ 383), be the same as that of the dominant seventh, but, as with vii°7 the intervals of the chords will be different. We have already seen, earlier in this chapter (§ 409), how to distinguish the derivative of a ninth from that of an eleventh, though both may contain exactly the same notes. When in Chapter VI rules were given for finding the root of a chord from the figured bass, it was said that, for the discords above the ninth, the rules needed modification. If we turn to Ex. 324, we shall see an illustration of this. In the first bar, the root (which is here also the generator,) is in the bass throughout, and the 4 and 2 of the figured bass show the eleventh and ninth of the chord respectively. We therefore now give a new rule, which will apply equally to chords of the eleventh, with their derivatives, and to the chords of the thirteenth, with their derivatives, to be dealt with in the next chapter. The rule is: *Every diatonic discord in any key is either a dominant discord, or a derivative of one.* All that is needful, therefore, is to determine the key, as explained in § 409; when this is fixed, and its dominant known, it becomes perfectly easy to calculate the distance of the intervals above it.

418. If the generator, third, and fifth of the chord are all absent, the seventh, ninth, and eleventh give the triad on the subdominant.

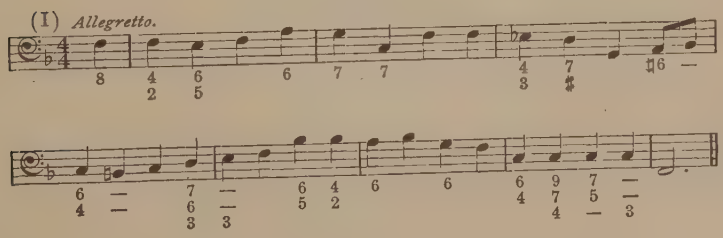
Ex. 347.



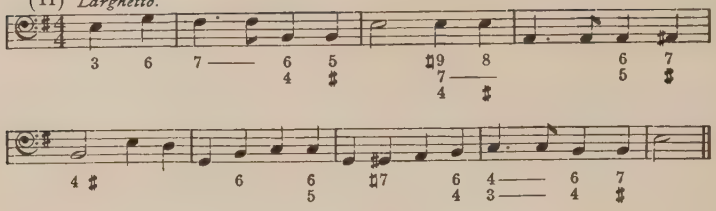
C: IV c: iv

As none of these notes are dissonant with one another, the chord is a concord, and the eleventh (the fifth of the chord) is now free in its progression. As with the chord of the supertonic in the major key, we do not analyze these chords as derivatives (Compare § 391).

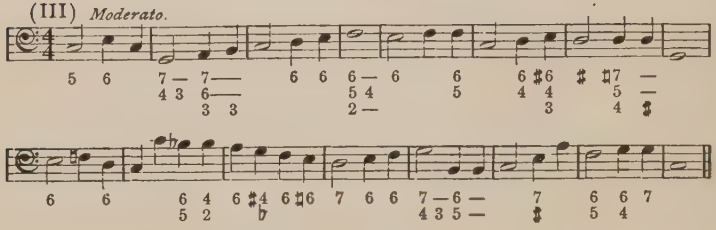
Exercises.



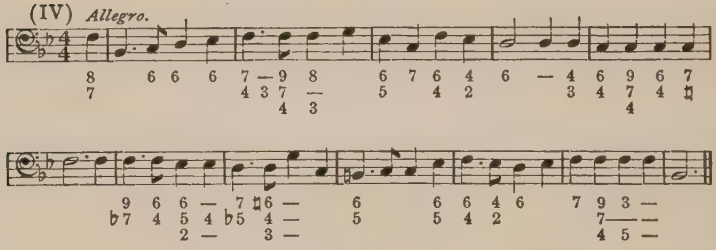
(II) *Larghetto.*



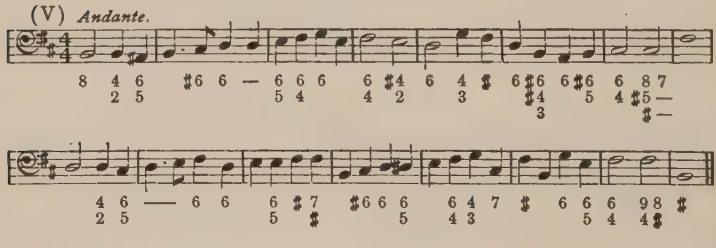
(III) *Moderato.*



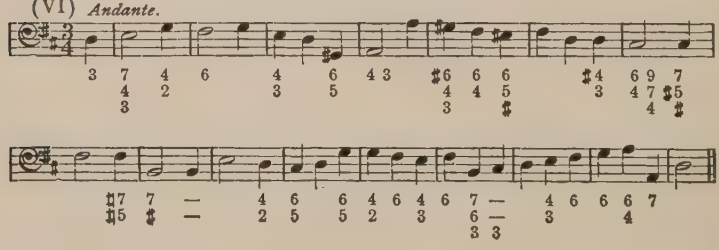
(IV) *Allegro.*



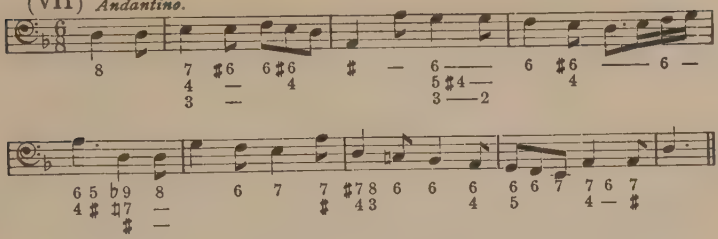
(V) *Andante.*



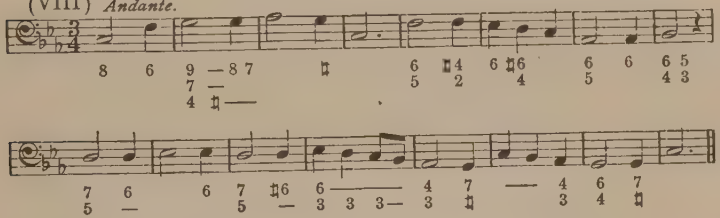
(VI) *Andante.*



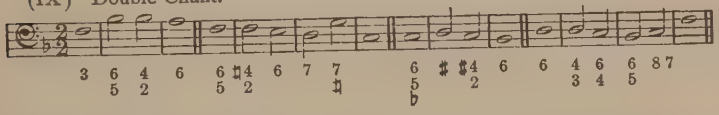
(VII) *Andantino.*



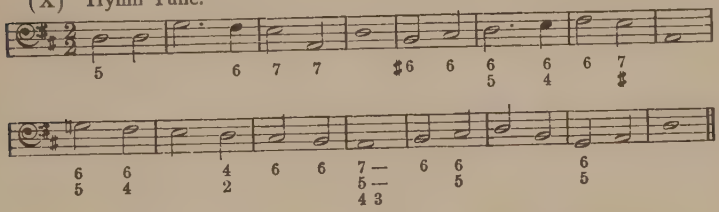
(VIII) *Andante.*



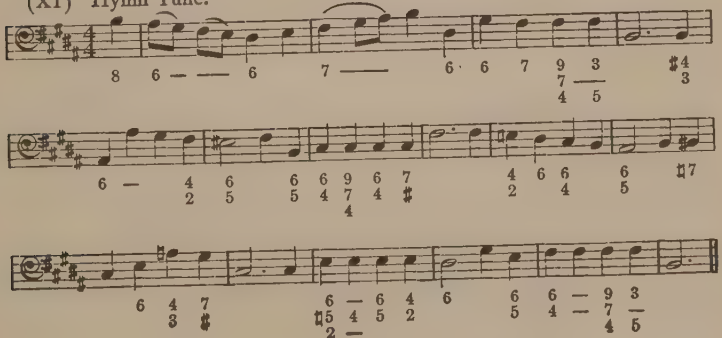
(IX) Double Chant.



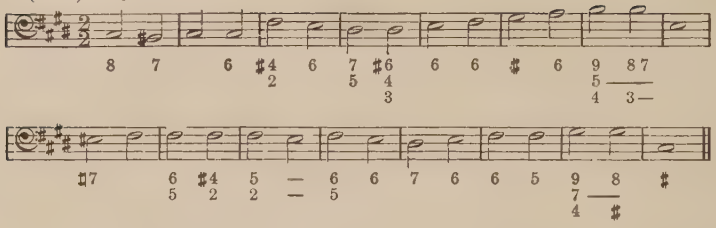
(X) Hymn Tune.



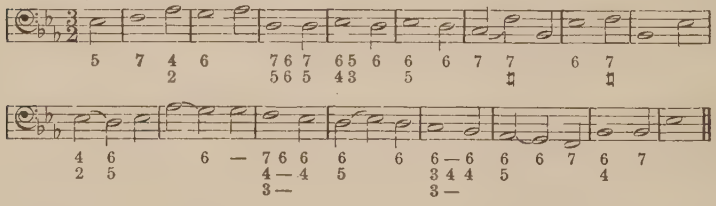
(XI) Hymn Tune.



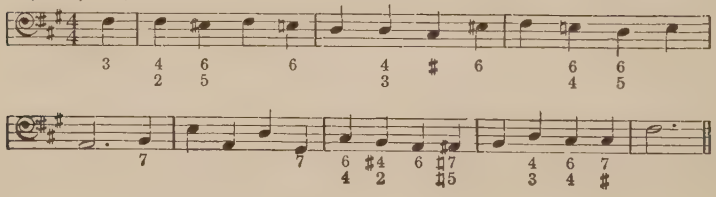
(XII) Hymn Tune.



(XIII.) Hymn Tune.



(XIV) Hymn Tune.



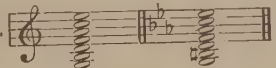
CHAPTER XIV.

THE CHORD OF THE DOMINANT THIRTEENTH.

419. Another third placed above the chord of the dominant eleventh gives a chord of the dominant thirteenth. This completes the series of possible dominant discords; for the next third above the thirteenth will be the dominant itself; and the series will evidently recommence.

420. As the thirteenth of the dominant is the mediant, one of the two notes which differentiate the major and minor key, we shall have a major thirteenth above the root in a major key, and a minor thirteenth in a minor key, exactly as we have already seen (§ 368,) with the dominant ninth. We now show the chord in its complete shape in both keys.

Ex. 348.



C: V13 c: V13

421. It will be seen that these chords contain every note of the diatonic scale—a point on which we shall have more to say later in this chapter. But it is extremely rare to find them in their complete shape. This is partly because most music is written in four-part harmony; partly also because the notes on which the dissonances resolve will generally not appear with the dissonances themselves (§ 375). In actual composition, the forms of the chord that we shall meet with will be various selections of four notes each—sometimes only of three—from the possible seven.

422. An important difference between the thirteenth and the other higher notes—the seventh, ninth and eleventh—of this chord is, that while the latter are all dissonant to the root, the thirteenth, being the octave of the sixth, is in itself a consonance; when the chord is in root position, the note is far more frequently figured 6 than 13. It would be a grave mistake, nevertheless, to confound the two; they can always be distinguished by their treatment. This will become quite clear as we proceed.

423. As the chord of the thirteenth contains seven notes, it can of course have six inversions, which, in marking our roots, we indicate by V13*b*, V13*c*, etc., up to the last inversion, V13*g*, which has the thirteenth in the bass. A large number of derivatives are also to be met with; and the student will find in his exercises and examples many combinations of figures that will be new to him. In analyzing his harmonies, therefore, he

will find the rule given in the last chapter (§ 417,)—that every diatonic discord in a key comes from the dominant of that key —of the utmost assistance.

424. All the lower notes in a chord of the thirteenth, up to and including the eleventh, obey the rules laid down for their treatment in preceding chapters, it being remembered that, as with other chords that contain dissonances, account has only to be taken of such notes as are actually present.

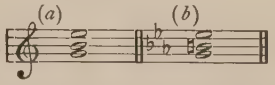
425. A chord of the dominant thirteenth may resolve either upon its own generator—that is, upon another dominant chord —or upon a tonic or submediant chord. If it resolve upon a dominant chord, the thirteenth generally falls one degree to the fifth (see Ex. 350 later,) or, less frequently, rises to the seventh of the chord; it may exceptionally leap to the third. If it resolve on a tonic or submediant chord, the thirteenth will mostly either fall a third to the tonic or remain as a note of the next chord. Other resolutions are possible; but these, being chromatic, will be dealt with in a later chapter.

426. It will be seen that the major and minor thirteenths are perfect fifths above the major and minor ninths. When, therefore, the ninth is present in a chord of the thirteenth, care must be taken in the resolution to avoid possible consecutive fifths (Compare § 380).

427. Though an enormous number of combinations of four out of the seven notes of the chord of the thirteenth are *possible*, comparatively few are in actual use, and the treatment of the chord is far less complicated than might be imagined. The most convenient way of dealing with them will be to take each combination separately, speaking at present only of diatonic thirteenths. We shall begin with those most frequently used.

428. I. *Root, third, and thirteenth.* This is the simplest form of the chord, containing only three notes.

Ex. 349.



This chord, it will be seen, is identical with the chord iii*b* (in the minor key III′*b*), which we have already met with among the diatonic triads of the key, while it is evident that the last inversion* of this form of the chord will give the root position of the mediant triad. Whether we are to regard it as a mediant chord or a thirteenth will depend upon the way it is followed.

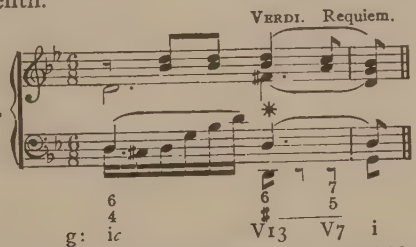
* We do not say "the *second* inversion" here, though this form of the chord contains only three notes, because the second inversion of a chord has the fifth in the bass (§ 161). Here it will be not the fifth, but the thirteenth, that will be in the bass. (See Ex. 354.)

If the next chord be the submediant, or a first inversion on the next degree of the scale, it is best to consider it as a mediant chord; but if it be followed either by dominant or tonic harmony, as in the examples to be given directly, such progressions will prove that it is employed as a dominant thirteenth.

429. In four-part harmony, the best note to double will be the root. But, as the thirteenth is itself consonant with the root, it is possible, though less good, to double that note when it is major. It is not advisable to double the minor thirteenth, because it makes with the third the interval of a diminished fourth. In figuring this chord the thirteenth is almost invariably marked as a 6.

430. Our first example will show the chord resolved upon a dominant seventh.

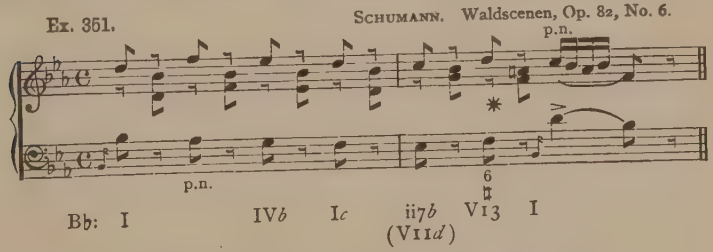
Ex. 350.

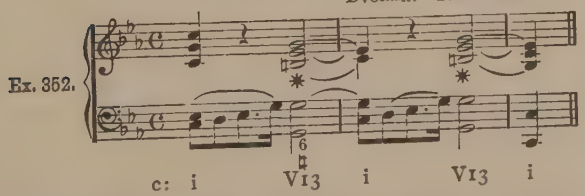


Here the thirteenth descends one degree to the fifth of the chord, and at the same time the doubled root in the upper part falls to the seventh.

431. We next give examples, in a major and a minor key, of the resolution of this form of the chord upon the tonic chord.

Ex. 351.





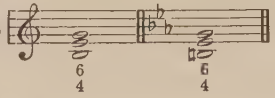
Ex. 352.

In both these examples, the thirteenth falls a third to the root

of the tonic chord. No further explanation will be needed.

432. The first inversion of this form of the chord is rarer than the root position.

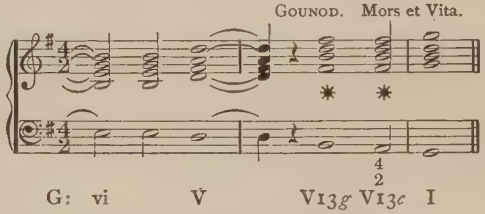
Ex. 353.



Observe that, though this inversion is figured $\frac{6}{4}$, it is not a second inversion; it will therefore be wrong to double the bass, as in other $\frac{6}{4}$ chords (§ 190). The root will here be the best note to double.

433. The last inversion of this form gives, as already said, the notes of the mediant triad in root position. Our next example will show its treatment as a thirteenth.

Ex. 354.

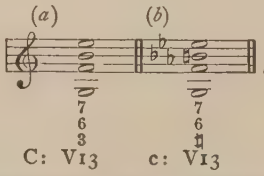


G: vi V V13*g* V13*c* I

In the second chord of the second bar is the last inversion of the dominant thirteenth, the thirteenth itself being doubled (§ 429). One of the thirteenths (that in the bass,) falls to the fifth, while the other remains stationary; we thus get another form of the chord, of which we shall speak presently (§ 438), in its second inversion. This new form of the chord resolves upon the tonic chord, the thirteenth remaining (§ 425,) as the third of the tonic chord.

434. II. *Root, third, seventh, and thirteenth.* This is the commonest and the most useful form of the chord.

Ex. 355.



C: V13 c: V13

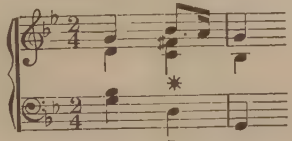
It is important to remember that *the thirteenth should always be above the seventh*, because of the harsh dissonance of a second which it will make if below that note. It is also very seldom good to place the third above the thirteenth; it may indeed be laid down as a general principle that, unless it be in the last inversion, when the thirteenth is in the bass, that note should,

with extremely rare exceptions, be *at the top of the chord.*

435. If this chord be resolved on dominant harmony, the thirteenth falls to the fifth, while the other notes remain. We give a few examples in various positions.

Schubert. Sonata, Op. 122.

Ex. 356.

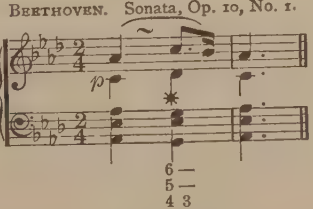


g: i V13 V7 i

Our next illustration shows the first inversion of the same chord, and in a major key.

Beethoven. Sonata, Op. 10, No. 1.

Ex. 357.

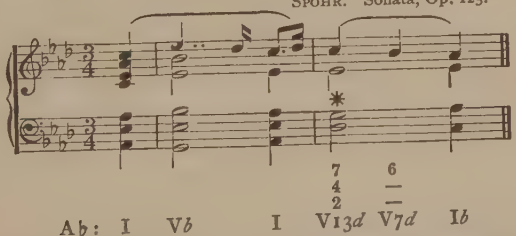


A♭: I V13♭ V7♭ I

It is clear that there can be no second inversion of this form of the chord, because it contains no fifth; the third inversion is not uncommon.

Spohr. Sonata, Op. 125.

Ex. 358.



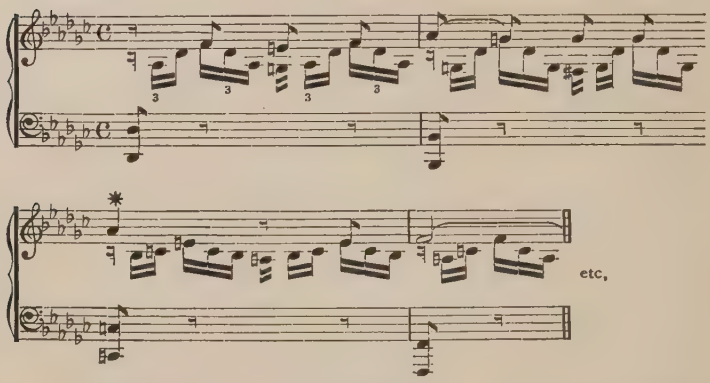
A♭: I V♭ I V13d V7d I♭

The last inversion of this form of the chord is unavailable, because the thirteenth would be below the seventh.

436. It has been said in an earlier chapter (§ 357,) that many of the higher discords can be explained in more than one way. In our last three examples, it is possible in each case to regard the thirteenth as an *appoggiatura* (an accented auxiliary note,) to the fifth of the chord, which follows it. Those theorists who do not admit the existence of chords of the thirteenth would give this explanation. But this would not account for

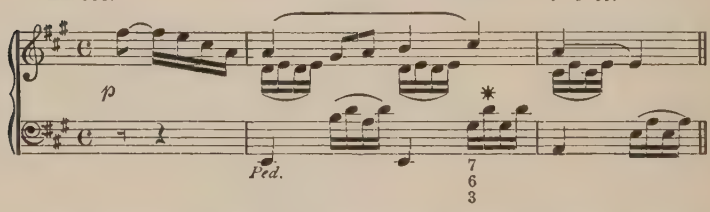
such a passage as the following, in which the thirteenth exceptionally leaps to the third.

Ex. 359. Schumann. Faschingsschwank aus Wien.



437. If this form of the chord resolve upon a tonic chord, the thirteenth will fall a third to the tonic, while the third and seventh are resolved as in a chord of the dominant seventh. One example will suffice.

Ex. 360. Schumann. Bunte Blätter, Op. 99, No. 1.

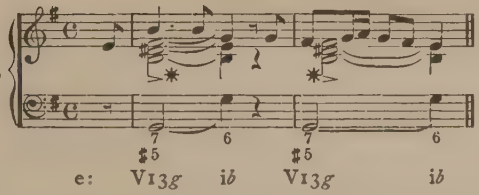


It is only needful to remind the student that with broken chords, as here, the harmony is the same as if all the notes were sounded together. Here, therefore, at * we have not a first inversion, but a root position of V13; the E is the real bass throughout the bar.

438. III. *Root, third, fifth, and thirteenth.* This form of the chord is much rarer than the preceding. We have seen an example of it, in the second inversion, in the last chord but one of Ex. 354, where, owing to the step-moving bass, it has much the character of a passing chord. But it is mostly found with a *minor* thirteenth, and in the last inversion. In this case it resolves upon the first inversion of the tonic chord,—the thirteenth remaining (as in the example just referred to,) as the third of the chord.

Schumann. Paradise and the Peri.

Ex. 361.

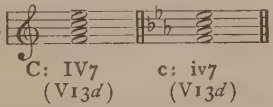


Notice that here, again, it would be possible to explain the D♯ and F♯ as accented auxiliary notes to the E and G of the following chord.

439. Various other forms of the chord of the thirteenth are occasionally to be found; but they are not important enough to require to be dwelt on in detail. We shall introduce a few in our exercises; the student will have no trouble with them, if he will remember what has been said in § 423.

440. Numerous derivatives of the chord of the thirteenth are in more or less common use; but, as these are nearly all chromatic, we shall defer speaking of them till a later chapter. The only important diatonic derivative is that in which the generator, third, and fifth of the chord are all wanting. There remains a chord of the seventh on the subdominant.

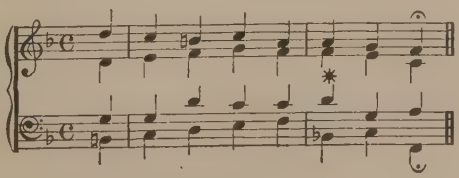
Ex. 362.



The original seventh of the chord has now become the root; and the thirteenth is now the seventh above that root. Both the third and fifth of the chord are now consonances; for, though they are the ninth and eleventh of the original chord, none of the lower notes, with which they make dissonances, are present (§ 391). The only note which is restricted in its progression is the seventh of the chord. If this chord is resolved (as is most frequent,) on a dominant chord, the seventh falls one degree to the fifth of the chord, as in the two following examples, one in a major, and one in a minor key.

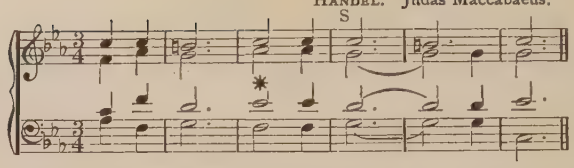
Bach. Cantata.—"Nimm von uns, Herr."

Ex. 363.



Handel. Judas Maccabaeus.

Ex. 364.

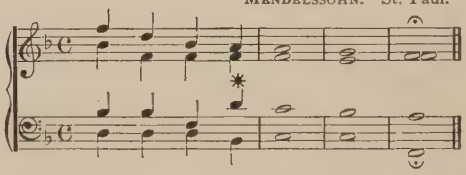


As the note which was the thirteenth is now a seventh, it is no longer always advisable to keep it at the top of the chord; in Ex. 364 it is in the tenor.

441. The chord in this form can also be resolved on the second inversion of the tonic chord, when the seventh will remain as the third of the chord. (Compare Exs. 354, 361.)

Mendelssohn. St. Paul.

Ex. 365.

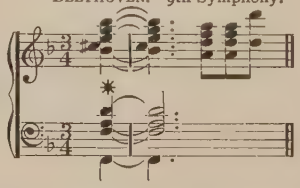


442. The three upper notes (ninth, eleventh, and thirteenth,) of a chord of the thirteenth give the chord of the submediant. As the notes of this chord, whether in a major or minor key, are all consonant, we do not analyze it as a derivative (Compare §§ 391, 418), but as a diatonic triad.

443. It was said in § 421 that it was extremely rare to find all the notes of a chord of the thirteenth present at once. The only example we have met with is in a well-known passage in the finale of Beethoven's Choral Symphony, quoted by Macfarren in his "Six Lectures on Harmony" as a specimen of the chord in its complete shape:—

Beethoven. 9th Symphony.

Ex. 366.



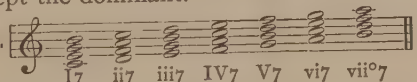
But, when we come to examine the treatment and progression of this chord, we shall find that, though it contains the same notes as a full chord of the thirteenth, it can hardly be so in reality. The key is D minor, and the root of the chord would be A; D and F being respectively the eleventh and thirteenth. But, G, the seventh of the chord, resolves on F; and the note on which a dissonance resolves may not (except the ninth with

the root,) be sounded with the dissonance. (§ 375.) This restriction, however, does not apply to auxiliary notes; and the simplest explanation of the passage is, that all the upper notes, forming by themselves a chord of the diminished seventh, are accented auxiliary notes to the notes of the tonic chord, together with which they are sounded. It is common enough to find one, or even two auxiliary notes employed in this manner; the unusual feature is, to meet with every note of the chord so accompanied.

444. Before we proceed, in the next chapter, to treat of the chromatic elements of the key, something must be said, in connection with chords of the thirteenth, about a class of discords to which much more importance was formerly attached than is the case at the present day. These are what are known as Secondary Discords. By this term are meant all discords which are in accordance with the key-signature, and contain any other intervals from their root than a major third, perfect fifth, and minor seventh, which, when found together, are, as we already know (§ 232), the characteristic intervals of a dominant, or "fundamental" discord. For instance, if we add a seventh to the supertonic triad of the major key, it will be a secondary discord; for, though it contains a perfect fifth and minor seventh, it does not contain a major third. Similarly, if we add B♮ to the tonic chord of C major, we shall have a secondary discord, with a major instead of a minor seventh.*

445. If we place a seventh, in accordance with the key-signature, above each of the triads of the major key given in Ex. 62, we shall have a secondary seventh on every degree of the scale except the dominant.

Ex. 367.



I7 ii7 iii7 IV7 V7 vi7 vii°7

With several of these chords we have already made acquaintance; ii7 is a derivative of V11*c* (§ 406), IV7 of V13*d* (§ 440), and vii°7 of V9*b* (§ 382). The chord I7 consists of the eleventh, thirteenth, root, and third of the dominant thirteenth; iii7 of the thirteenth, root, third, and fifth; and vi7 of the ninth, eleventh, thirteenth and root. Every note of each of these chords is found in the complete chord of the dominant thirteenth (§ 421). Notice also that in none of these chords is the characteristic interval of a fundamental discord—the diminished fifth between the major third and minor seventh—to be seen. I7 and IV7, which have major thirds, have also major sevenths; while ii7, iii7, vi7 and vii°7, which have minor sevenths,

* Some theorists use the name "diatonic" instead of "secondary;" but the latter term is certainly preferable, as the dominant seventh is also diatonic.

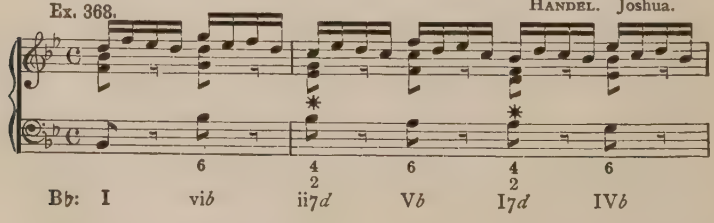
have also minor thirds. A similar series of secondary sevenths, though with differing intervals, can also be obtained in the minor key.

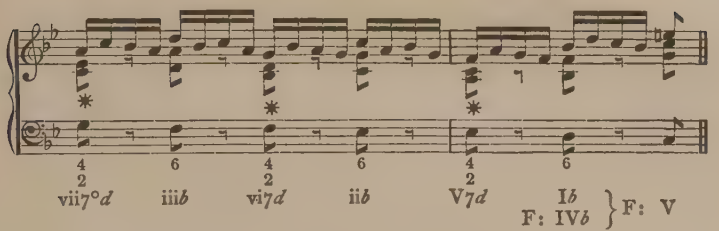
446. In speaking of the various discords, it has more than once been said that in their treatment it is only necessary to take into account such notes as are actually present. This rule should be particularly observed with regard to these secondary sevenths, in which the seventh above the root is always to be considered as the dissonant note, and resolved by step downwards, like a dominant seventh, quite irrespective of its relationship to the generator, or even of its being itself the generator. For instance, in the chord vi7, the root of the chord is the ninth of the dominant, and the dominant (the generator,) is the seventh. But it is not the ninth which is restricted in its movement by the presence of the dominant, as in a chord of the ninth (Chapter XII); it is the dominant, which has now become the seventh of the chord, that is itself restricted by the presence of the root below. With all these secondary sevenths, the student has not to concern himself in the least with the relationship of the various notes of the chord to the dominant, but only with *their relations to one another.*

447. The old rule for the treatment of secondary sevenths was, that the seventh must be prepared—that is, must appear as a consonance in the same voice in the preceding chord (§ 334,) —and that it must resolve upon a chord the root of which is a fourth higher than its own. Though it is by no means compulsory to prepare the seventh,—for no discords except suspensions absolutely *require* preparation—it will be advisable, if the seventh has appeared in the preceding chord, to keep it in the same voice. The best resolution in general is that prescribed by the rule just given; the student will find instances of it in the resolution of ii7 in Exs. 331, 332, 337 and 344. It is also possible to resolve it on a chord the root of which is a second above its own, as in Ex. 363.

448. The following interesting passage shows a series of these secondary sevenths, each in its third inversion, and each resolved, according to the old rule, on a chord the root of which is a fourth above its own. Notice that in each case the seventh is prepared by the third of the preceding chord.

Ex. 368. HANDEL. Joshua.

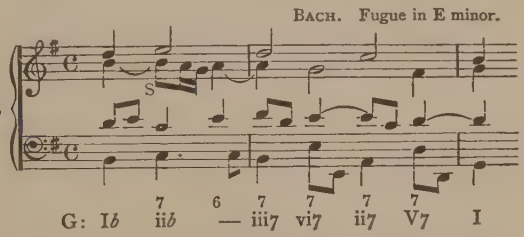




As we take no account of the harmonic derivation of these sevenths, we do not mark them as derivatives.

449. Sometimes a secondary seventh, instead of resolving, as in the above passage, on a triad, will resolve on another seventh, the root of which is a fourth above its own.

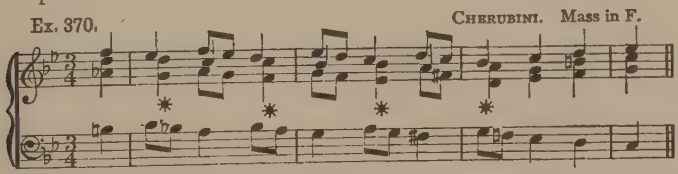
Ex. 369.



It is evident that this sequence of sevenths can be continued indefinitely. The important points to be noticed in this progression are, first, that the seventh of each chord is resolved on the third of the following chord, exactly as the dominant seventh resolves on the third of the tonic chord, while the third of each chord remains to be the seventh of the next one; and, secondly, that it is necessary to omit the fifth in each alternate chord. (Compare § 236.)

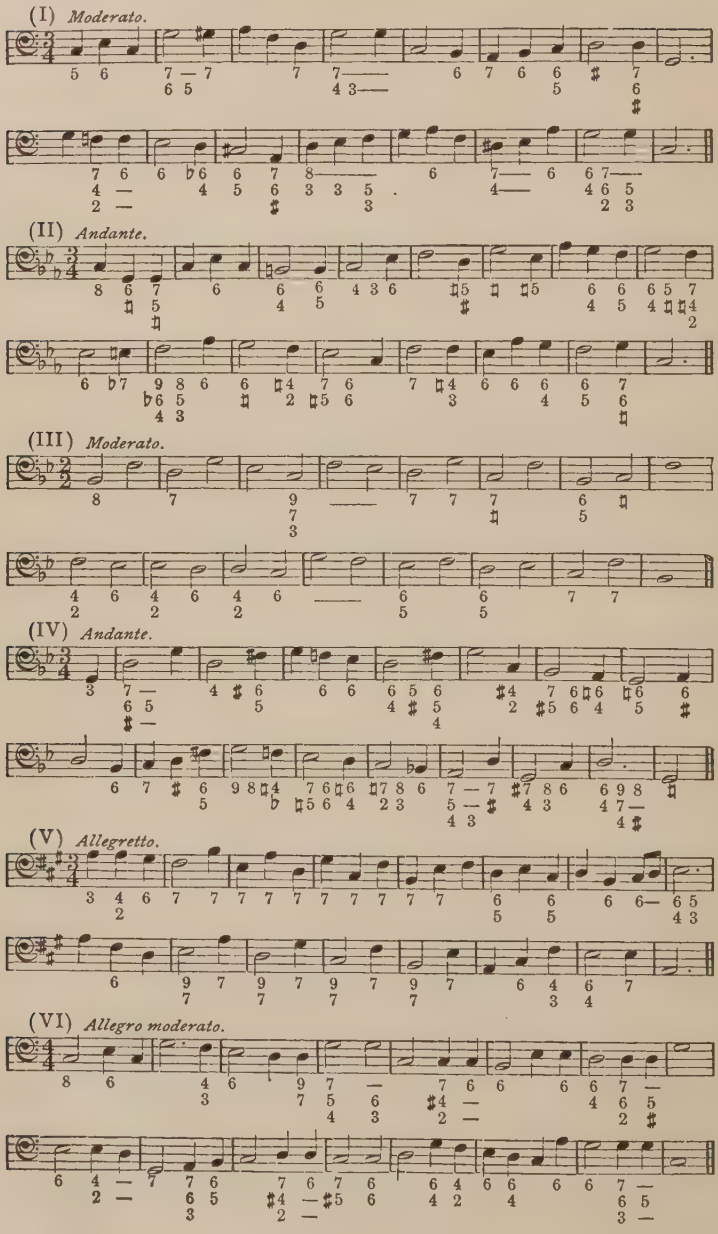
450. Secondary ninths are much rarer than secondary sevenths, but are treated in the same manner, the ninth falling one degree, and the root generally rising a fourth. We give one example.

Ex. 370.

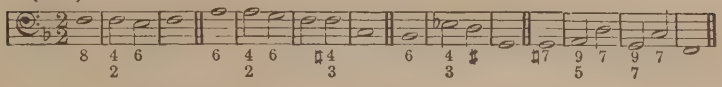


451. The exercises now to be given will include not only chords of the thirteenth, but secondary discords. In the case of the latter, the student need not, in marking their roots, indicate their harmonic derivation. If he has thoroughly understood this chapter, he ought to have no difficulty in distinguishing

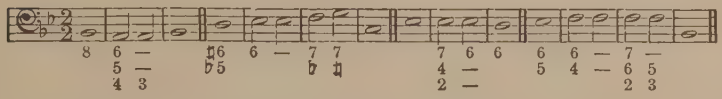
between them and genuine chords of the thirteenth.



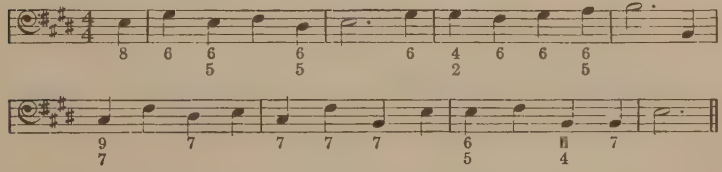
(VII) Double Chant.



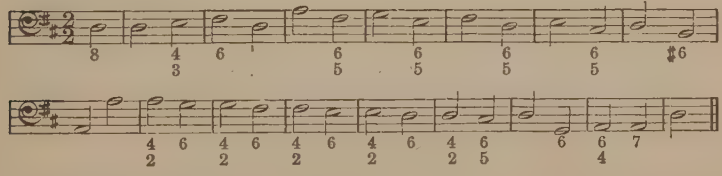
(VIII) Double Chant.



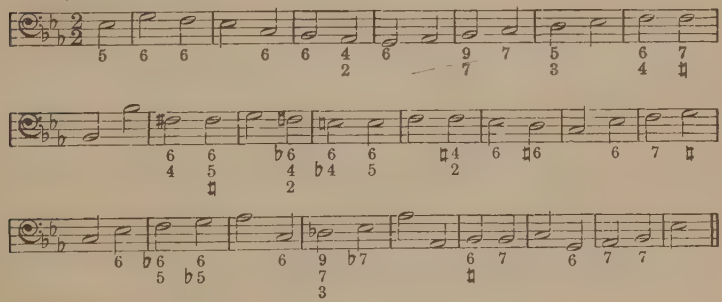
(IX) Hymn Tune.



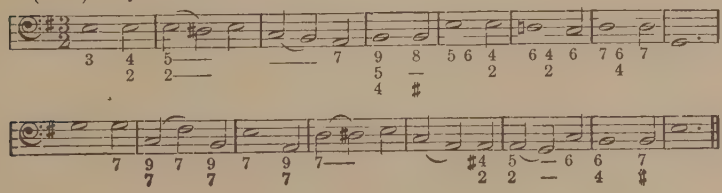
(X) Hymn Tune.



(XI) Hymn Tune.



(XII) Hymn Tune.



CHAPTER XV.

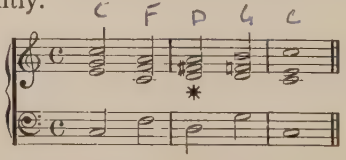
CHROMATIC TRIADS—THE CHROMATIC SCALE.

452. In the preceding chapters of this book we have treated of the whole of the diatonic material of a key, and it has been seen that this is all obtained from seven notes, one on each degree of the scale, all of which conform to the key-signature. But, as a key consists of twelve notes (§ 32,) there are five other notes remaining, each of which requires an accidental. Such notes are called *Chromatic* notes, and chords that contain them are called Chromatic chords.

453. When treating of modulation in Chapter IX, it was shown that a change of key was effected by putting an accidental before one of the notes of the key we were quitting, the altered note thus becoming a diatonic note of the new key. Thus in Ex. 203 the sharp before the F in the third chord of (*a*) takes the music from C into the key of G, the new key being established by the chords that follow. But it was pointed out in § 278 that no single chord can ever define a key. As all music must be in some key, it follows that every chord must be either in the same key as the chords that precede it, or in the same key as the chords that follow it. Now if the chords *preceding* any one chord be in the same key as the chords *following* that chord, then, if the chord have one or more accidentals before it, it will be a Chromatic Chord in the key.

454. To make this clearer, we will vary Ex. 203 (*a*). We will take the first three chords as before, but will follow the third chord differently.

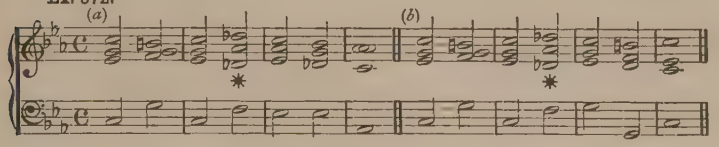
Ex. 371.



The first two chords are, as before, in the key of C. The third chord (✱) looks as if we were about to modulate into the key of G; but the fourth and fifth chords absolutely define the key of C (§ 241). The chords preceding and following the chord marked ✱ are therefore all in the key of C; consequently the chord ✱ must be *chromatic* in that key.

455. Let us take another illustration, this time in a minor key.

Ex. 372.



At ✱ of (*a*) there is a modulation to A flat; the first inversion of the chord of D flat is therefore regarded as diatonic in its relation to the new key, and here it is not considered to belong to the key of C minor at all. But the same chord (✱) at (*b*) is followed by chords which define the key of C minor, and in this latter case the fourth chord is a chromatic chord in C minor. Whenever a modulation takes place, the note inflected by an accidental is regarded as belonging to the key in which it is diatonic. But if there be no modulation such note forms part of a chromatic chord. Hence we get the following definition:—*A chromatic chord in a key is one which contains one or more notes foreign to the signature of that key, but which induces no modulation.*

456. It will be seen that in both our last examples (371 and 372 (*b*)) the accidentals introduced suggest a modulation to some one of the keys in which those accidentals would be diatonic notes, but that the suggestion is not confirmed but contradicted by what follows. They are, in fact, borrowed from some other key, and are only recognized as chromatic by their being followed by chords belonging to the key *into* which, and not *from* which, they are borrowed. It will greatly aid our understanding of the subject, if we remember that all chromatic chords are *borrowed chords*.

457. A moment's thought will show us that, as a key contains only twelve notes, there must be some limitation to our borrowing powers. If, for example, we could borrow both the chords of E major and of A flat major into the key of C, we should have both G ♯ and A ♭ in that key. But two notes which are enharmonics of one another can never be both used in the harmonies of the same key (§ 308), or we shall have more than twelve notes in the key. The first question to be answered is therefore, From what keys do we borrow our chromatic notes? The answer is very simple:—From the nearest related keys; that is, the fifth above (the dominant,) and the fifth below (the subdominant).

458. For a reason that will be seen later in this chapter, we first deal with the minor key. Let us take the diatonic scale of C minor, and change it into a chromatic scale, by dividing each tone into two semitones. To know which name to give to

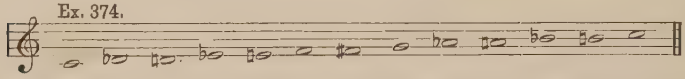
the intermediate notes, we have only to remember that the keys from which we borrow are G minor and F minor, and from these keys we borrow *only the diatonic notes.*

459. We first give the scale of C minor, harmonic form:—

Ex. 373.

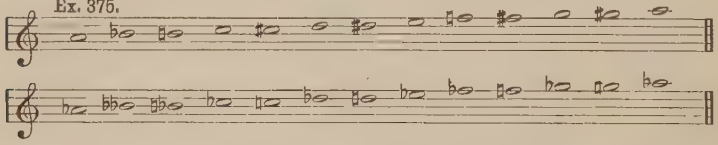
The note between C and D must be D♭, borrowed from F minor; neither F minor nor G minor contains C♯. Between E♭ and F we shall have E♮ (from F minor); and between F and G, F♯ (from G minor). Between A♭ and B♮ there will be two intermediate notes, A♮, borrowed from G minor, and B♭, which is diatonic in both F minor and G minor. The whole scale is therefore—without key-signature:—

Ex. 374.



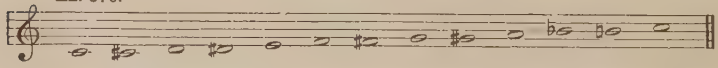
The easiest rule for writing the chromatic scale correctly is the following:—*No degree of the scale has more than two notes upon it; and neither tonic nor dominant can be chromatically altered.* This form of the scale is called the "harmonic chromatic scale," and is the same ascending and descending, and is also the same in major and minor keys. That the student may see the application of the rule just given, we show the chromatic scales of A♮ and of A♭, which he should compare with the scale in Ex. 374.

Ex. 375.



460. As a matter of convenience, the chromatic scale is often written, especially in ascending passages, with a different notation from that just given. In the chromatic scale of C, for example, C♯, D♯, and G♯ are often substituted for D♭, E♭ and A♭; sometimes, also, though more rarely, A♯ is written instead of B♭. But F♯ is almost invariably retained. The scale of C will then appear in the following form.

Ex. 376.



This form of the scale is somewhat easier to read, especially in rapid music, as it has fewer accidentals. This is probably the chief reason for its frequent adoption; because we find that in the descending chromatic scale the correct notation is usually

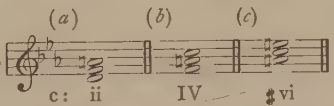
adhered to—most likely for the same cause, as it is not uncommon in this form to find the flattened fifth instead of the sharpened fourth, thus saving an accidental.

461. The form of the scale just given is called the "melodic chromatic scale"; to write it correctly, it must be remembered that in ascending, the mediant and submediant are only found once, and all the other degrees of the scale twice; while in descending, it is the same as the harmonic scale.*

462. It is impossible to include any keys less nearly related than the dominant and subdominant in the borrowing keys without bringing more than twelve notes into the key. If, for instance, we borrow for C minor from D minor, the next sharp key after G minor, we shall introduce C sharp. But we already have D flat as a chromatic note; and the latter has the prior claim, because it is a note of a nearly related key. Similarly, if on the flat side we go beyond F minor to B flat minor, its submediant, G flat, cannot co-exist in the key of C minor with F sharp, the leading note of G minor.

463. It is important to remember that in borrowing chromatic chords for a minor key, we borrow only from the *minor* keys a fifth above and a fifth below. If we borrowed also from the major keys, we should introduce chords which would destroy the special character of the minor key, and render the tonality obscure. Thus from F major we should have the following chords:

Ex. 377.



all of which would be destructive of the true character of the key. The manner in which the root of the third chord is marked will be explained directly.

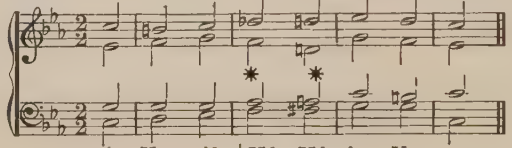
464. It was said above (§ 456,) that the introduction of a chord containing any chromatic note always suggests a modulation to some key in which that chord would be diatonic; and the next question is, How is the suggested modulation to be averted? There are three principal ways of doing this. First: in every key the tonic is the most important chord; if therefore we follow the chord containing an accidental by the tonic chord of the already established key, the feeling of tonality is not disturbed. An example of this method has been seen in Ex. 372 (*b*), at the fourth and fifth chords.

* In actual practice, the great masters are often extremely careless in their notation of the chromatic scale, which they seem to write in many cases on no system at all. In Beethoven's concerto in G, for instance, the chromatic scale is written in four different ways.

465. The second, and perhaps the most obvious, way of averting modulation is by the immediate contradiction of the chromatic note in the following chord. Thus, in Ex. 371, the F sharp which suggests the key of G is immediately followed by F natural, neutralizing the suggestion.

466. The third method of averting modulation is, to follow one chromatic chord by another *borrowed from a different key*—either a chord borrowed from the dominant by one borrowed from the subdominant, or *vice-versa*. It is, of course, needful that the suggestion of the second chord should, like that of the first, be contradicted. One suggestion balances the other, and the feeling of the original tonality remains unimpaired. The following progression, varied from that given in Ex. 372 (*b*), will illustrate this method of treating chromatic chords.

Ex 378.

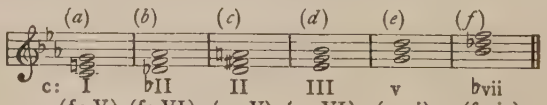


c: i V7*c* i♭ ♭II♭ II♭ ic V7
(f:VI♭) (g:V♭)

467. In marking the roots of chromatic chords, it is necessary, when the root is itself the chromatic note, as in the fourth chord of this passage, to indicate the fact by an accidental placed before the Roman numeral. Here the ♭II shows that the second degree of the scale is lowered a semitone. If the passage were a semitone higher, in C sharp minor, and the chord in question were that of D♮ instead of D♭, it must still be marked ♭II, not ♮II, because here D♮ would be the *flattened* supertonic of the key. If, on the other hand, the root be a note of the diatonic scale chromatically raised, we prefix a sharp, even though the note may actually be a natural as in Ex. 377 (*c*). The bracketed figuring below shows the key from which the chromatic chord is borrowed, and what chord it is in that key. The student need never confuse the bracketed analysis of chromatic chords with that of derivatives (§ 253), if he only remembers that in the former, the *position* of the chords is the same; in derivatives, as the root is different, the position is also always different.

468. All the diatonic material of the neighbouring keys can be borrowed for chromatic chords. We now give a complete list of the chromatic common chords in C minor.

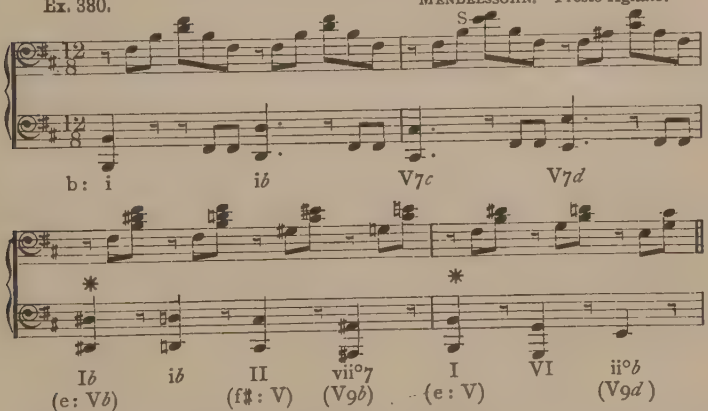
Ex 379.



The diminished and augmented triads of F minor and G minor can also be borrowed; but these chords being, as we know, derivatives of dominant discords, and comparatively seldom used, it will not be needful to consider them at present.

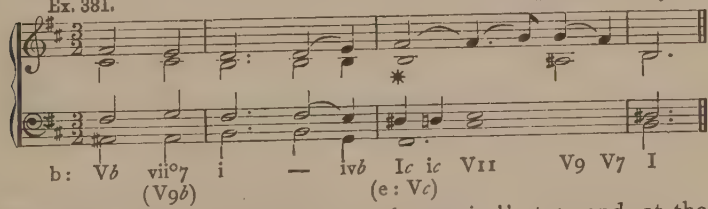
469. Of the chords given above, only the first three are often employed. The chord at (*a*), being a major chord on the tonic, we have already met with (§ 229,) as the final chord —the so-called "Tierce de Picardie"—in the minor key. As such, it is not considered a chromatic chord. But it can also be used chromatically, and in this case care must be taken not to leave the key. Evidently, if followed by the chord iv there will be a modulation to the subdominant key. The following examples will show how this is to be avoided.

Ex. 380. Mendelssohn. Presto Agitato.



The third crotchet of the third bar is the chord (*c*) of Ex. 379, of which we shall speak presently. Our next example shows the second inversion of the tonic major chord.

Ex. 381. Spohr. Calvary.



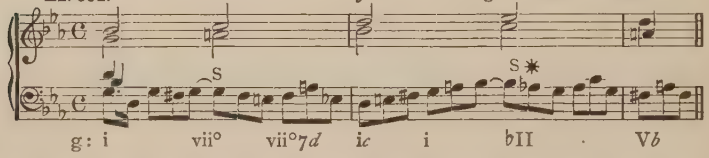
Here we see the chord first as "chromatic," at ✱, and, at the end of the passage as the Tierce de Picardie.

470. It will be seen that in both these examples (and many more might be given,) the chromatic chord has the character of a passing chord. In a minor key I is seldom used in any other way; and the rule for its treatment, which we deduce from the

practice of the great composers is, that *the third of the chord* (the leading-note of the subdominant key,) *must be approached from the semitone on one side of it, and proceed to the semitone on the other side.* The third must never be doubled, because it is the leading-note of the key from which the chord is borrowed.

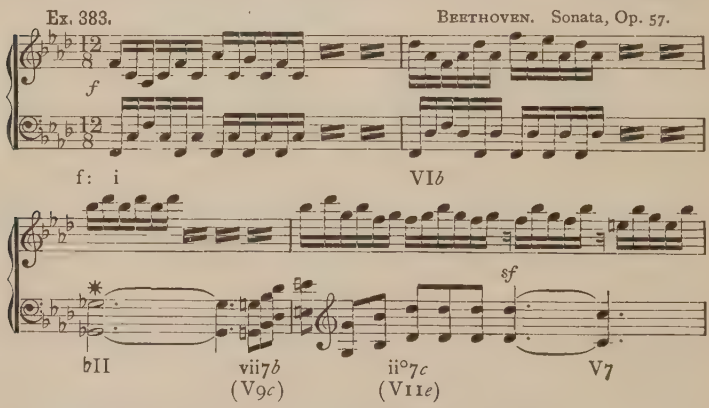
471. The second chord (*b*), in Ex. 379, is one of the most important, and in its first inversion one of the most frequently employed, of the chromatic triads. The root is here the chromatic note, and the third of the chord will be generally the best note to double, because it is a primary note in both the keys, from which and into which it is borrowed. It is possible, however, to double either of the other notes. There is no restriction as to the chords which shall follow this chord, if only there be no modulation.

Ex. 382. J. S. BACH. Organ Prelude in C minor.



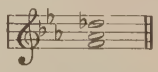
The student will easily recognize the auxiliary notes; here the chromatic chord is followed by V*b*. In the following passage,

Ex. 383. BEETHOVEN. Sonata, Op. 57.



it is followed by a chord of the diminished seventh.

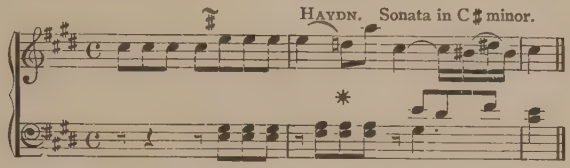
472. The first inversion of this chord



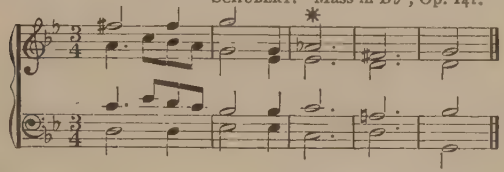
is generally known as the "Neapolitan sixth," a name for which it is difficult to give a satisfactory reason. This form is much more frequently met with than the root position. Here

follow three examples of this chord, illustrating some of its most usual progressions.

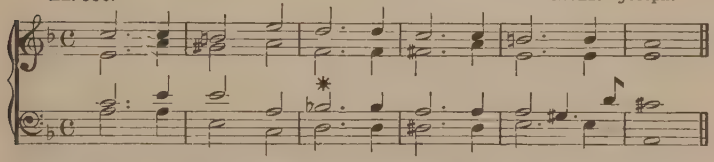
Ex. 384.



Ex. 385.



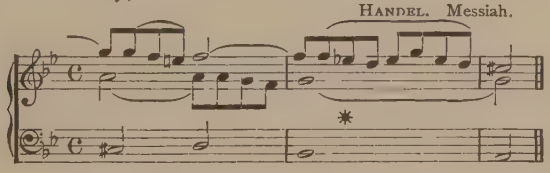
Ex. 386.



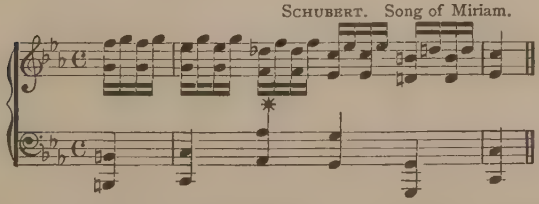
The analysis of these passages being very simple, we leave it to the student to make his own, merely saying that in Ex. 386, the chord ✳ is followed by the diminished seventh of E minor, here used as a transitional dominant in A minor. It will be seen that these three examples illustrate the three methods of averting modulation explained in §§ 464–466.

473. The second inversion of this chord is also sometimes, though more rarely, to be found.

Ex. 387.



Ex. 388.



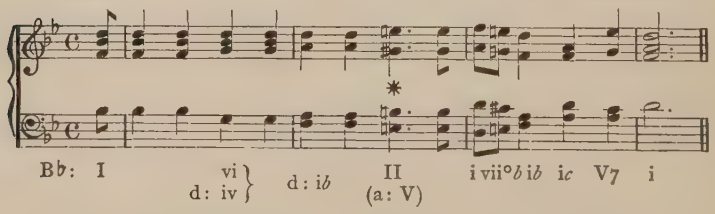
At Ex. 387 the chord is followed by a dominant seventh, and at Ex. 388 by the second inversion of the tonic chord.

474. The third chord, (*c*) in our list of chromatic triads, Ex. 379, is no less important than that last spoken of. It is a major chord on the supertonic, and is the dominant chord of the dominant key employed as a chromatic chord. Here the root is the only diatonic note, both third and fifth being chromatic. The third, being the leading-note of the key from which the chord is borrowed, may never be doubled (Compare § 470), and special care must be taken with its treatment. It must always *move a semitone, either upwards or downwards.*

475. If the third of this chord rise a semitone (to the dominant), it is clear that it cannot be followed by the dominant chord, or there will be a modulation; it should be followed by some position of the tonic chord. If, on the other hand, the third fall a semitone, to the subdominant of the key, it may be followed by any chord of which the subdominant is one of the notes, as in Ex. 371. When used in its first inversion this chord is subject to the same rules as regards its third as in the root position. Obviously, as its third is now in the bass, if this note rises, it should be followed by the second inversion of the tonic chord. If the third falls there is more choice. The second inversion of the chord is very rare.

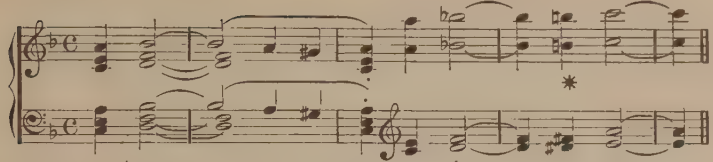
476. It is comparatively seldom that this chord is found in the simple form we are now describing. Generally the 7th, frequently also the 9th is added to it, as will be seen in the following chapters. We now give a few examples of its employment without these dissonant notes.

Ex. 389. WAGNER. Der Fliegende Holländer.



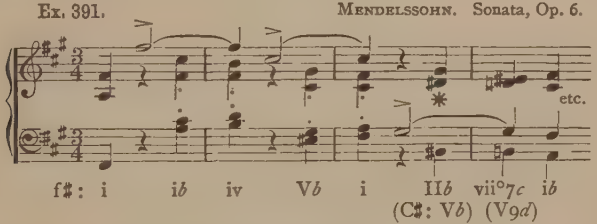
Observe here that, though this passage begins in B flat, there is evidently a modulation to D minor, as marked in our analysis, before the chord ✱; because none of the keys in which this chord is diatonic are "borrowing keys" for B flat, as we shall see when we speak of the chromatic chords of a major key. It is very seldom that II is followed, as here, by the root position of the tonic chord; either the first or second inversion is much more usual.

Ex. 390. Beethoven. Sonata, Op. 31, No. 2.



The second chord of this passage is clearly the "Neapolitan sixth" (§ 472,) in A minor; if the key were D minor, the C in the first chord would be sharp. Here at ✱ we see an excellent illustration of the "balancing" spoken of in § 466; a chord borrowed from the subdominant key is followed by one borrowed from the dominant, which last is followed by the tonic chord of the key in which both the preceding are chromatic. In our last example of this chord—

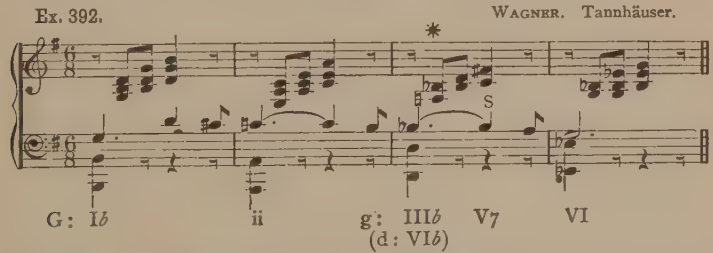
Ex. 391. Mendelssohn. Sonata, Op. 6.



the third of the chromatic chord falls a semitone, and B♮ is a note of the following chord.

477. The remaining chromatic chords—(*d*) (*e*) and (*f*) of Ex. 379—are very rare. We give a few examples:—

Ex. 392. Wagner. Tannhäuser.



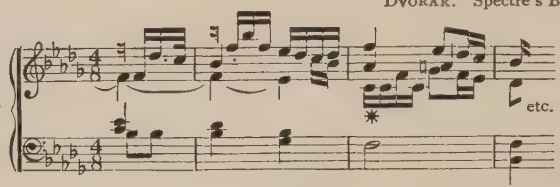
In this beautiful passage the chromatic chord III♭ is approached from the key of G major, we shall see shortly that it can be used in either the major or minor key. It is followed by V7, which also belongs to both keys; and the resolution of this latter chord on the chord of E flat proves the key of G minor.

478. The minor chord on the dominant (Ex. 379) (*e*), though possible, is the rarest of all; when it is used the minor

third of the chord will rise a semitone to the leading note.

Dvořák. Spectre's Bride.

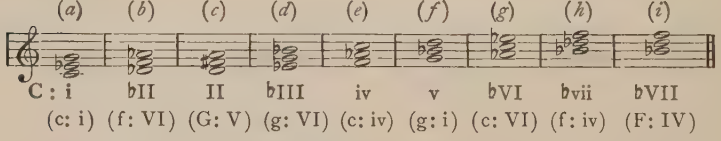
Ex. 393.



The B flat in the bass of the first chord is a pedal note (Chap. XX). Observe that the A flat in * cannot be an auxiliary note to the A natural, for an auxiliary note is a second above or below the following note; A flat is therefore a harmony note. An example of the chord bvii will be seen when we come to speak of the employment of that chord in a major key.

479. It was said in § 463 that for the chromatic chords of a minor key we were unable to borrow from the neighbouring major keys. But the converse does not apply. All the diatonic material of a minor key can be borrowed for its tonic major without necessarily disturbing the tonality at all.* We thus obtain a considerably larger number of chromatic chords in a major key than in a minor. In C major we can not only borrow the diatonic chords of F major and G major, but of C minor, F minor, and G minor. The available chromatic common chords in C major are the following:—

Ex. 394.

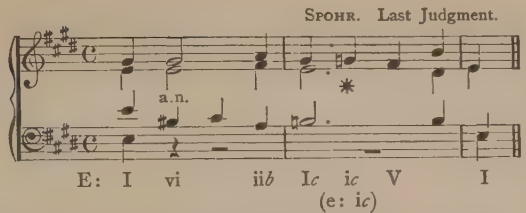


With some of these chords, (*a*) (*c*) and (*e*), more than one derivation is possible; we take them from the most nearly related keys.

480. Like the major tonic chord in the minor key (§ 470), the minor tonic in the major key can only be used as a "passing chord;" otherwise the tonality is disturbed. We give an example of its employment in this way.

* The reason of the difference is probably to be found in the more artificial nature of the minor key. See Appendix II.

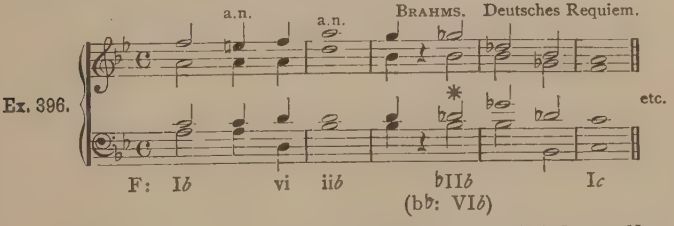
Ex. 395.



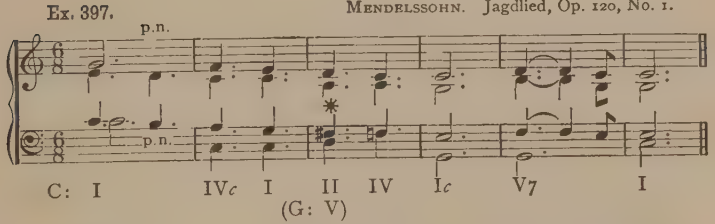
The minor chord on the dominant—Ex. 394 (*f*)—if used at all, (and we do not advise the student to use it,) should be similarly treated. The major chord on the supertonic (*c*,) is subject to the same restrictions as regards its third as in the minor key (§ 475); the remaining chords are free in their progression, provided always that they are followed in the same key from which they are approached.

481. We now give examples of some of these chords. No further explanation will be needed than is furnished by the root-progression marked under each passage.

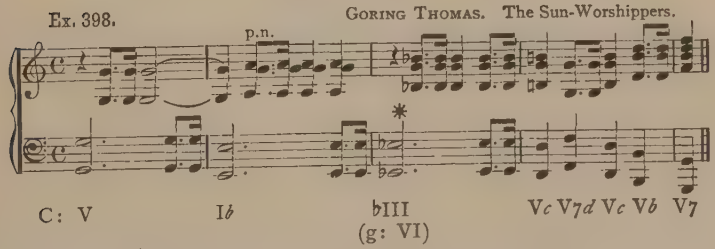
Ex. 396.



Ex. 397.

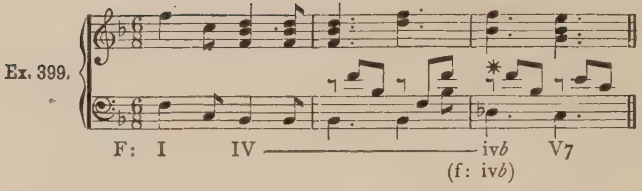


Ex. 398.

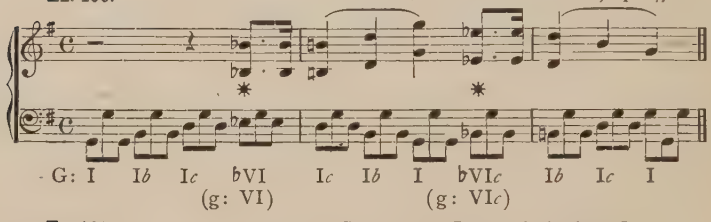


(The last five chords may also be analyzed as an arpeggio of V7.)

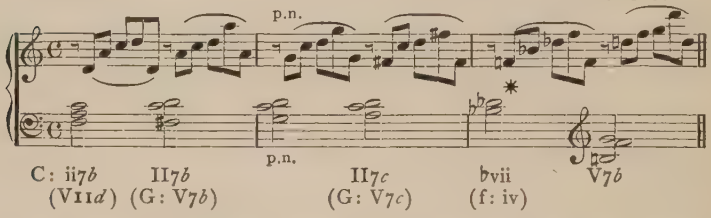
Ex. 399. BEETHOVEN. Mass in D.



Ex. 400. SCHUBERT. Sonata in B, Op. 147.

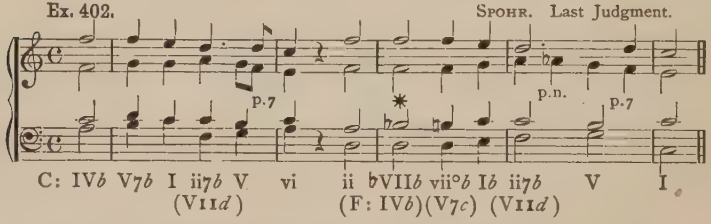


Ex. 401. SCHUMANN. Concerto in A minor, Op. 54.



(The chord II7 in this passage is a chromatic seventh, which will be explained in the next chapter.)

Ex. 402. SPOHR. Last Judgment.



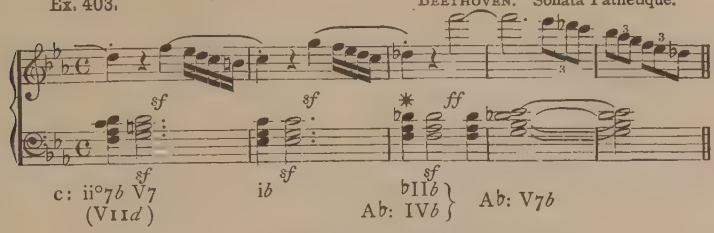
It should be noticed that, with the occasional exception of the root of ♭II, (see Ex. 385) it is very rare for the chromatic note of a chord to be quitted by leap.

482. In Chapter IX it was shown how modulation was frequently effected by means of some chord common to the key which was quitted and that which was entered. By the chords treated of in this chapter, the means of modulation are very largely increased; for a chord can be taken as chromatic in one key and quitted as diatonic in another; or conversely, it may be taken as diatonic in one key and quitted as chromatic in another.

We will give one example of each method.

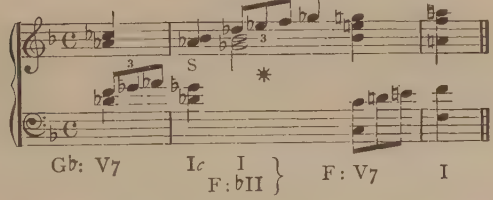
Ex. 403.

BEETHOVEN. Sonata Pathétique.

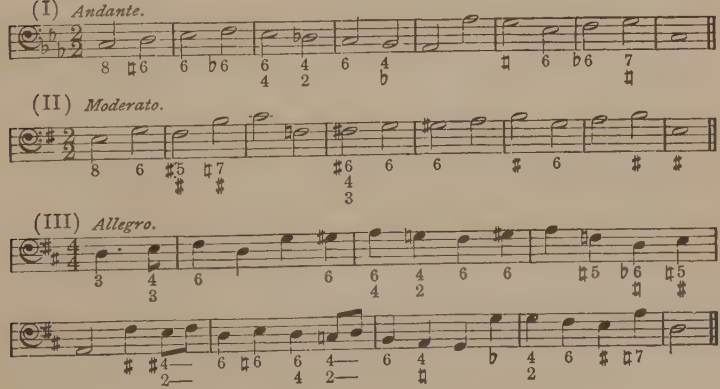


SCHUMANN. Novellette, Op 21, No. 1.

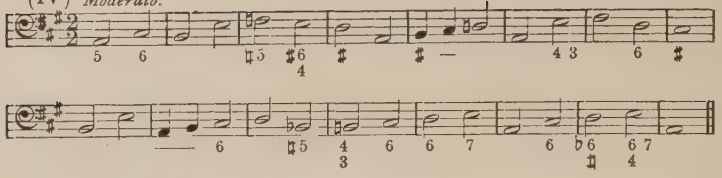
Ex. 404.



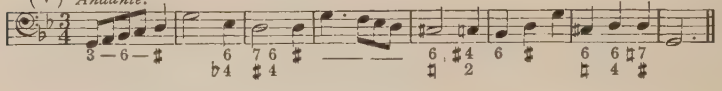
It will easily be seen that the method of which we have just give examples can be employed in many ways; for a chord which is taken as a chromatic chord in a key can not only be followed in the key from which it is borrowed, but in any other key in which it is diatonic or even chromatic. (See Ex. 437 in the next chapter). Thus, in Ex. 403 the chord ♭II♭ is borrowed from F minor, but followed in A flat major. A common chord can be a diatonic chord in three major and two minor keys, and every diatonic chord can also be chromatic in several keys. If the student analyzes the works of the great masters, he will find on nearly every page, especially in modern music, modulations effected by means of chromatic chords.



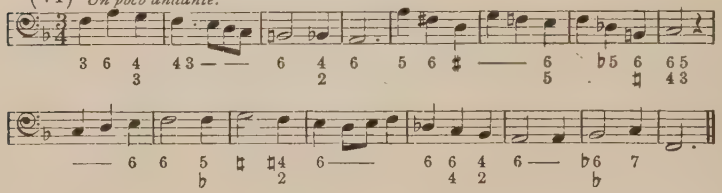
(IV) *Moderato.*



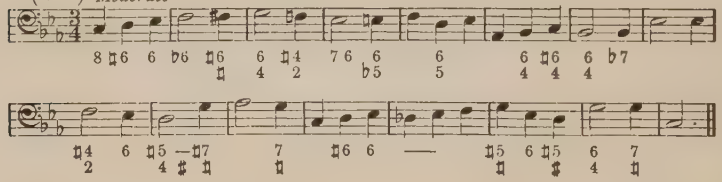
(V) *Andante.*



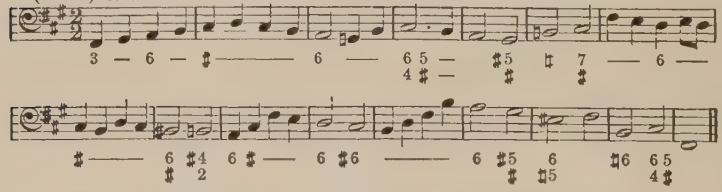
(VI) *Un poco andante.*



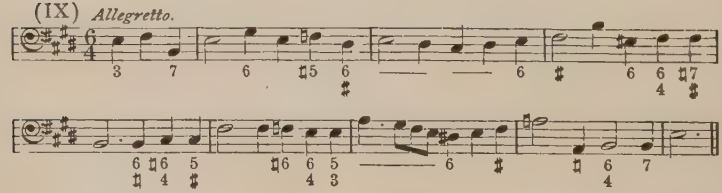
(VII) *Moderato*



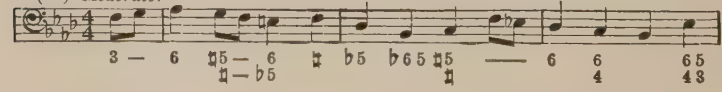
(VIII) *Andante con moto.*

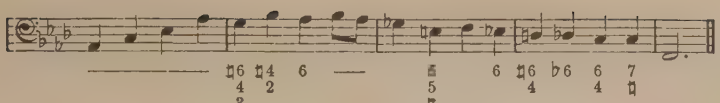


(IX) *Allegretto.*

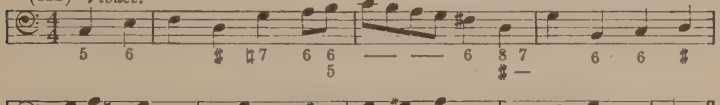


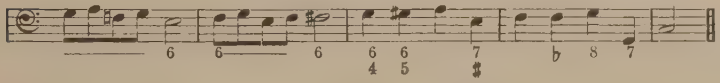
(X) *Moderato.*



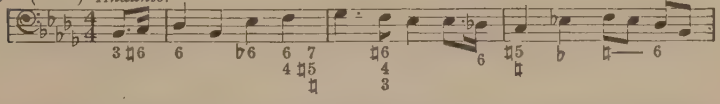


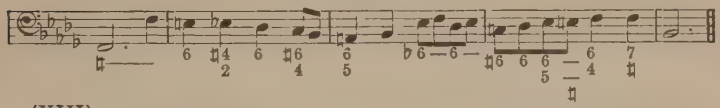
(XI) *Vivace.*



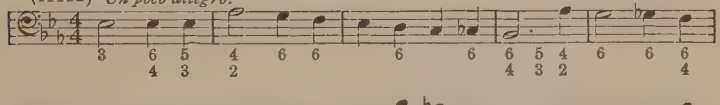


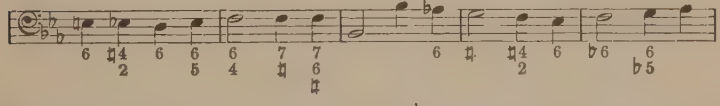
(XII) *Andante.*

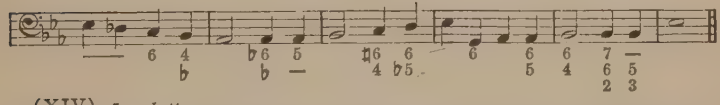




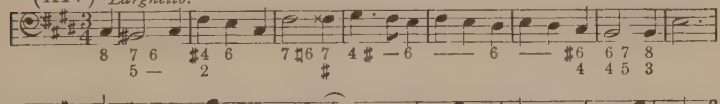
(XIII) *Un poco allegro.*

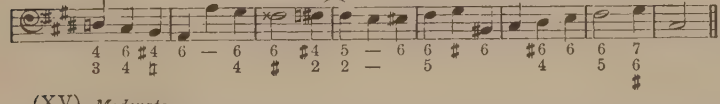




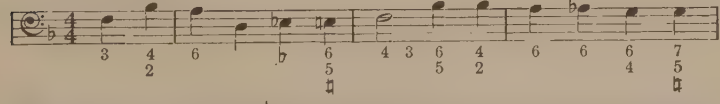


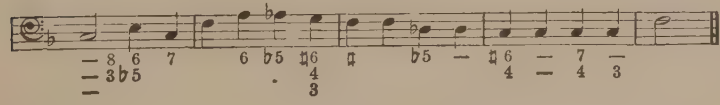
(XIV) *Larghetto.*



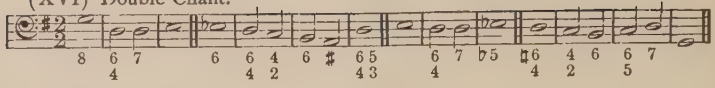


(XV) *Moderato.*

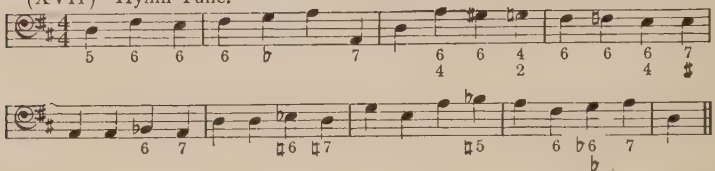




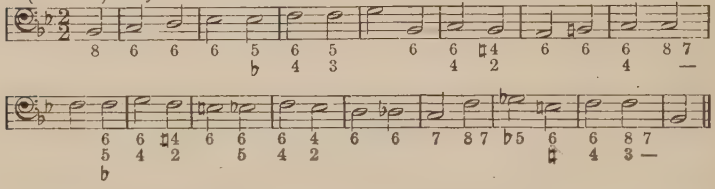
(XVI) Double Chant.



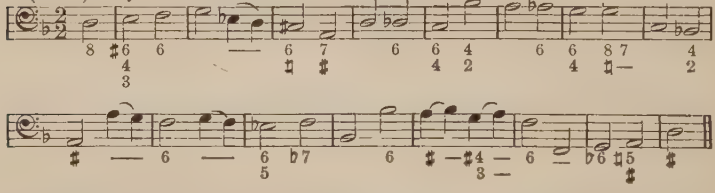
(XVII) Hymn Tune.



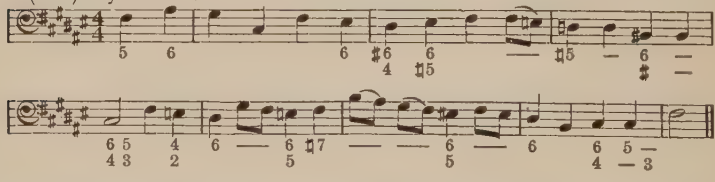
(XVIII.) Hymn Tune.



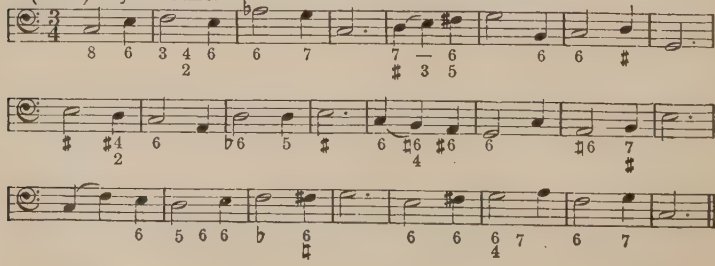
(XIX) Hymn Tune.



(XX) Hymn Tune.



(XXI) Hymn Tune.



CHAPTER XVI.

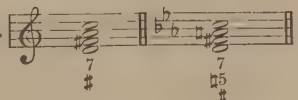
CHROMATIC CHORDS OF THE SEVENTH.

483. It was shown in the last chapter that the chromatic notes and chords in any key do not belong to that key in the same sense as the diatonic chords, but that they are borrowed from neighbouring keys, and become chromatic only when they are not followed in the key from which they are borrowed. It was also pointed out that the only keys from which we can borrow for chromatic chords are, for a minor key, the minor keys of the dominant and subdominant, and for a major key its dominant and subdominant majors, and the three minor keys with the same tonics. We saw in §§ 468, 479 the derivation of all the chromatic common chords of both minor and major keys, and gave rules for their treatment, and examples of their employment.

484. Just as we can borrow all the common chords of these neighbouring keys for chromatic purposes, we can also borrow all their dominant discords. In the present chapter we speak only of their dominant sevenths. As the dominant of the dominant key is the supertonic, and the dominant of the subdominant key is the tonic, the chords with which we have now to deal are usually described as chords of the supertonic and tonic seventh. We will take the former of these first, as being much more frequently used, and more important.

485. The Supertonic Seventh, being the dominant seventh of the dominant key, will be the same chord which we saw in the last chapter at Exs. 379 (*c*) and 394 (*c*), with the addition of the seventh from the root. The third of the chord is chromatic in both the major and the minor key; in the latter the fifth is also chromatic, and must be marked in the figuring, unless (as not infrequently happens in root-position,) it is to be omitted.

Ex. 405.



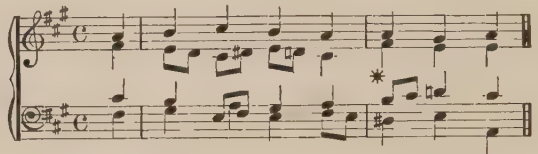
C: II7 c: II7
(G: V7) (g: V7)

486. The third of this chord, being the leading-note of the dominant key, is subject to the same restrictions as regards its progression as when it occurs in the supertonic chromatic triad (§§ 474, 475.) It should either rise or fall a semitone; in the

former case it should be followed by the tonic chord, and in the latter by some chord of which the subdominant of the key forms a part. But we occasionally find that, in the first inversion of this chord, when the third rises, it is followed, not by I*c*, but by V7, as in the following example in one of Bach's Cantatas:—

BACH. Cantata.—"Ach, Gott, wie manches Herzeleid."

Ex. 406.

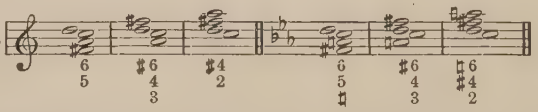


A: vi V*b* I V vi II7*b* V7 I
(E: V7*b*)

487. The seventh of this chord, being the tonic and therefore the most important note of the key, is much freer in its progression than the seventh in the chord of the dominant seventh. Its most usual resolution is either to fall a semitone, or to remain stationary; but it may also rise one degree to the fifth of the dominant chord, or even leap, upwards or downwards to a note of the chord that follows. These progressions will be all shown in the examples to be given shortly.

488. In the inversions of this chord, the third and seventh follow the rules just given. We show all these inversions, in both the major and the minor key, to call the attention of the student to the figuring.

Ex. 407.

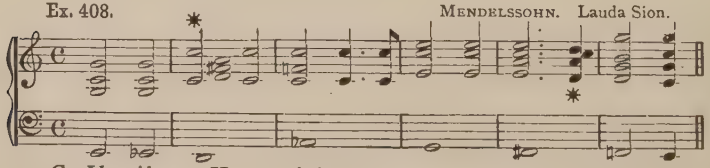


It is needless to mark the roots; the student can do this for himself.

489. We now give a series of illustrations of the actual employment of this chord, in all its positions, and with various resolutions. Our first example will show the root-position and first inversion of the chord.

Ex. 408.

MENDELSSOHN. Lauda Sion.



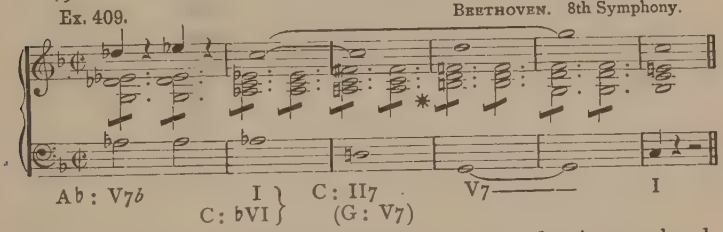
C: I*b* i*b* II7 iv*b* I*c* ♯iv°7 II7*b* V7*d* I*b*
(c: i*b*) (G: V7) (c: iv*b*) (II9*b*)(G: V7*b*)

This passage has several points of interest. In both the chords

of II7 the third falls a semitone; but in the first the seventh remains as the fifth of the next chord, while in the second it falls a second to the third of the dominant seventh. In the first bar is seen the rare chromatic chord i in a major key, used as a passing chord (§ 480); in Ex. 395 we saw the chord in its second inversion; here it is in the first. Notice also that at the beginning of the passage we have three consecutive chromatic chords; the feeling of tonality is not obscured, because no two adjacent chords are borrowed *from the same key*. The fourth chord from the end of the passage, marked ♯iv°7, will be explained in the next chapter.

490. Our next example—

Ex. 409. Beethoven. 8th Symphony.

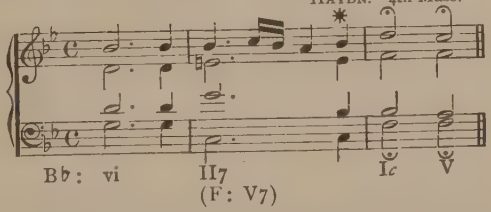


shows the seventh rising to the fifth of the dominant chord. The A flat in the first bar is a tonic pedal. We have here in the second bar an excellent example of a modulation effected by taking a chord as diatonic in one key, and leaving it as chromatic in another (Compare Ex. 404 in the last chapter).

491. We next give two passages in which the seventh leaps.

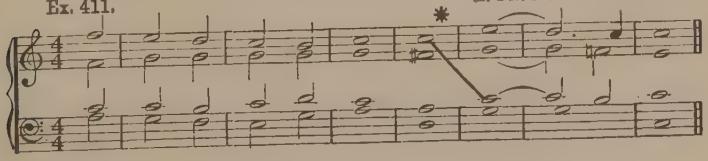
Haydn. 4th Mass.

Ex. 410.



Here the seventh is doubled, (Compare Exs. 194, 195,) one remaining as a note of the next chord, and the other being free. More frequently the seventh is not doubled, but the fifth of the chord proceeds to the note which was the seventh, or to its octave.

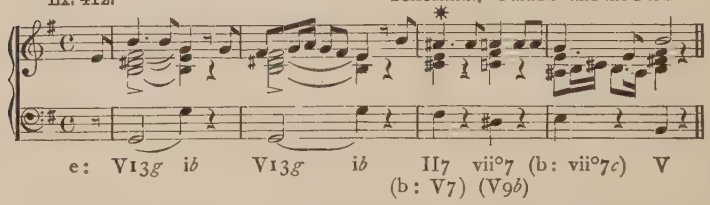
Ex. 411. E. Prout. 100th Psalm.



The harmonic progression is here so simple that it is superfluous to mark the roots.

492. Our last example of the root-position of this chord is given for a different reason.

Ex. 412. Schumann, Paradise and the Peri.

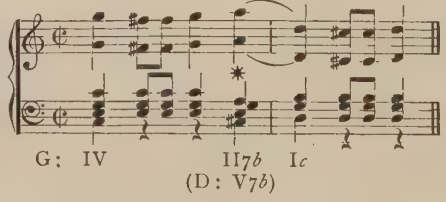


The first two bars of this passage have been already quoted in Ex. 361. We repeat them here, to prove the key. In the third bar of this example we see the seventh rising to the fifth of the following chord, not as in Ex. 409, but because the bass moves to the note on which the seventh would usually resolve. We have here an illustration of the seldom used progression spoken of in § 240.

493. We now give some examples of inversions of this chord. Few explanations will be needed.

Schubert. Overture, Die Zauberharfe.

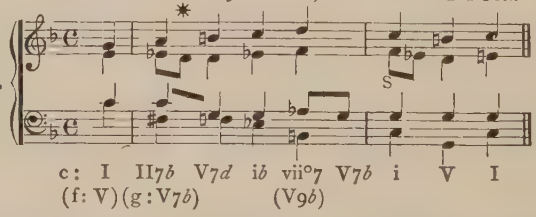
Ex. 413.



In our next example of the first inversion,

Bach. Cantata.—"Herr Jesu Christ, wahr'r Mensch und Gott."

Ex. 414.

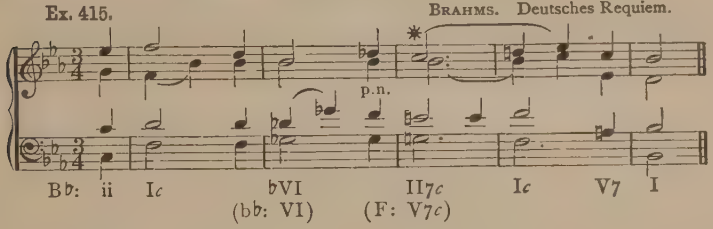


we see an illustration of the freedom of the seventh of the chord, which here leaps to the root of the next chord (§ 487); in a dominant seventh the leap would be wrong.

494. The next extract, showing the second inversion, also

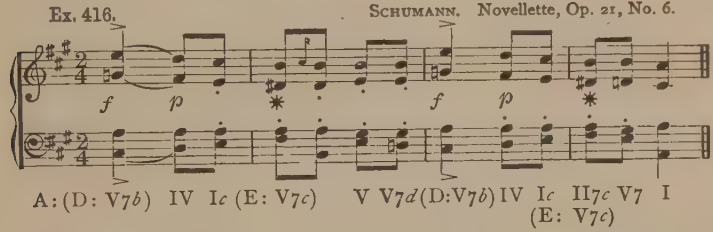
illustrates the following of one chromatic chord by another.

Ex. 415. BRAHMS. Deutsches Requiem.



In our next example,

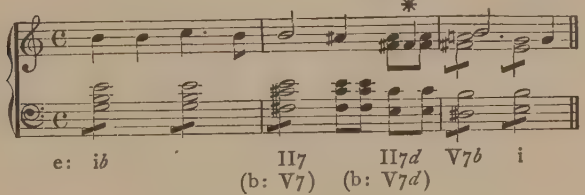
Ex. 416. SCHUMANN. Novellette, Op. 21, No. 6.



let the student notice the different treatment of the two chords marked ✳. They are both E: V7*c*; but the first is a transitional dominant, for it is followed by the chord of E, while the second is borrowed into A as a chromatic chord. Our example of the last inversion of the supertonic seventh needs no explanation.

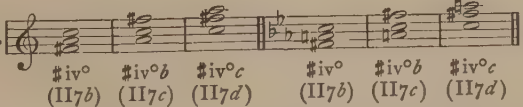
MENDELSSOHN. Athalie.

Ex. 417.



495. As with the dominant seventh, so with those now treated of, it is possible to omit the generator; we then obtain derivatives. Evidently the derivatives of II7 will be the following:

Ex. 418.

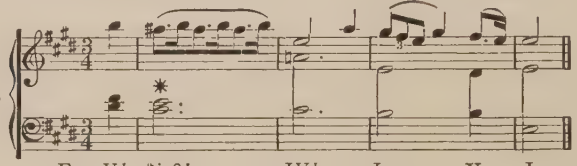


In marking the roots of these derivatives, it would complicate the analysis too much to add the keys from which they are borrowed; it would also be superfluous, as the student knows that II7 is V7 of the dominant key *borrowed;* it is therefore quite

clear that ♯iv° must be vii° of the dominant key. The derivatives of the chromatic sevenths are rare, though (as will be seen in the next chapter,) those of chromatic ninths are very common. No new rules will be required for the treatment of ♯iv°; it must be remembered that the root, being the leading-note of the dominant key, must never be doubled. One example of its employment will suffice.

Handel. Messiah.

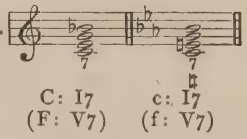
Ex. 419.



It has been already said (§ 262,) that Handel almost always omits the generator in V7*c*, using vii°*b* instead. Similarly, we here find ♯iv°*b* in place of II7*c*. Note the apparent irregularity in the treatment of the A♯ here. The A♮ in the third bar appears in the middle voice at first, and E in the upper part is *interposed* between the auxiliary note, B, and the A which should follow it. It is, in fact, a similar progression to the "ornamental resolutions" already met with in chords of the seventh and suspensions.

496. The Tonic Seventh is the dominant seventh of the subdominant key; the seventh in the major key, and the third and seventh in the minor are the chromatic notes, though the latter requires no accidental.

Ex. 420.

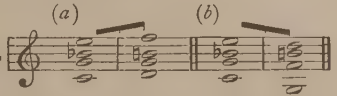


Tonic discords are much rarer than supertonic, the probable reason being that, as the tonic is essentially the chord of rest in the key, the feeling of tonality is easily disturbed if it is changed from a concord to a discord. The tonic seventh so strongly suggests the subdominant key that special care is needed to contradict the suggestion in its resolution. The practice of the great composers is therefore to resolve the chord either on a dominant or on a supertonic *discord* in the same key, the former being the more common.

497. As with the dominant and supertonic sevenths, the third and seventh of this chord are the two notes the progression of which is subject to fixed rules. The third of the chord,

being (as in other chords of the seventh,) a leading note, may never be doubled. If the chord resolve on a dominant discord, the third will usually rise a semitone to the seventh of the next chord; but it is possible, though less frequent, for it to fall a tone to the fifth of the chord.

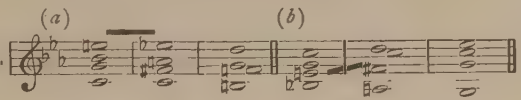
Ex. 421.



C: I7 V7*c* I7 V7
(F: V7) (F: V7)

If the chord be resolved on a supertonic discord, the third will either fall a chromatic semitone to the minor ninth of the supertonic, or rise a tone to its third.

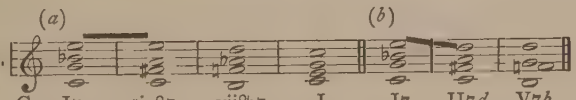
Ex. 422.



c: I7 ♯iv°7*c* V7*b* I7*d* II7*c* i*c*
(f: V7) (g: vii°7*c*) (f: V7*d*) (g: V7*c*)

Both these progressions illustrate the "balancing" spoken of in § 466. The second chord at (*a*) is a derivative of a minor ninth (§ 382), which is here chromatic, as will be explained in the next chapter. At (*b*) we have taken I7 in its last inversion, because this progression could hardly be used, as here, if the chord were in root-position. It would also be possible (but only in a *major* key,) for the third to remain stationary, or to fall a tone.

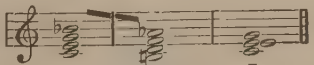
Ex. 423.



C: I7 ♯iv°7*c* vii°♭7 I I7 II7*d* V7*b*
(F: V7) (G: vii°7*c*) (c: vii°7) (F: V7)(G: V7*d*)

498. Unlike the seventh in the supertonic seventh, the seventh of this chord may never be doubled, even in the derivatives, being a chromatic dissonance. If the chord resolve on a dominant discord, this note will rise a semitone; if a supertonic discord follow, the seventh will fall a semitone to the fifth of the chord. The former progression is seen in Ex. 421; the latter in Exs. 422, 423. It is also possible for the seventh to fall a tone, when the tonic seventh resolves on a derivative of a minor ninth.

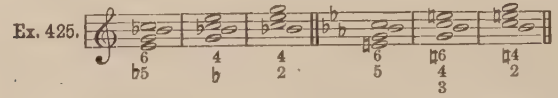
Ex. 424.



C: I7 vii°♭7 I
(F: V7) (c: vii°7)

499. No new rules are required for the inversions of this chord. As with the supertonic seventh, we give it in all its positions, to show the correct figuring.

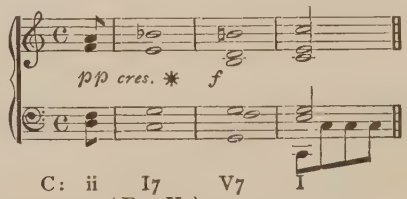
Ex. 425.



500. We now give examples of the employment of the tonic seventh in all its positions, and with various resolutions.

BEETHOVEN. Quartet, Op. 59, No. 3.

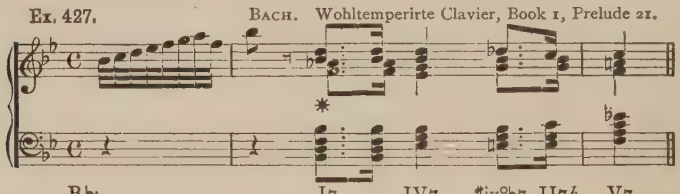
Ex. 426.



C: ii I7 V7 I
(F: V7)

Here the third of the tonic seventh falls a tone, and the seventh rises a semitone, as in Ex. 421 (*b*). In our next example,

Ex. 427. BACH. Wohltemperirte Clavier, Book 1, Prelude 21.

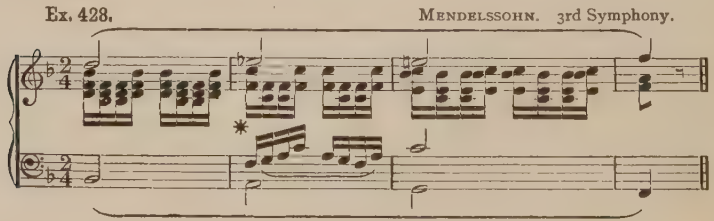


B♭: I7 IV7 ♯iv°b7 II7*b* V7
(E♭: V7) (V13*d*) (II♭9*b*)

the chord resolves upon a *derivative* of a dominant discord. Here the third is stationary, and the seventh falls a semitone, as in Ex. 423 (*a*) where, however, the chord is resolved on a derivative of a supertonic discord.

501. The first inversion of the chord will be seen in our next extracts.

Ex. 428. MENDELSSOHN. 3rd Symphony.

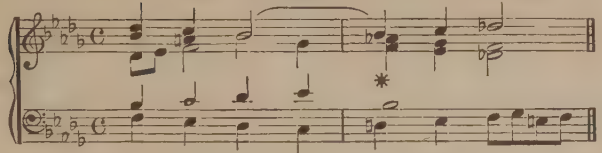


F: IV I7*b* V7*c* I
(B♭: V7*b*)

We have here the same progression of third and seventh seen in Ex. 426.

Bach. Wohltemperirte Clavier, Book 1, Fugue 22.

Ex. 429.

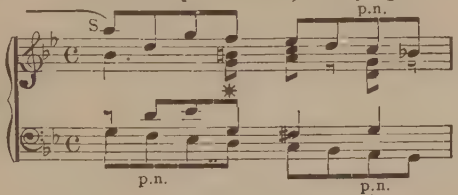


bb: *ic* V7*d* *ib* ii°7 I7*b* ii°7*b* *ic*
(V11*c*) (eb: V7*b*) (V11*d*)

Here, as in Ex. 427, the chord resolves on a derivative of a dominant discord. The third rises a semitone, and the seventh falls a tone (Compare Ex. 424).

Bach. Wohltemperirte Clavier, Book 1, Fugue 16.

Ex. 430.

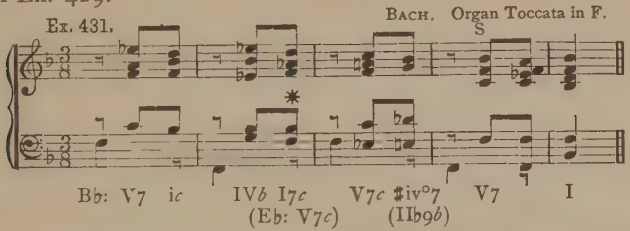


g: i VI I7*c* vii°7*c* i*b* i
(c: V7*c*) (V9*d*)

Here is the second inversion, resolved on a derivative of the dominant ninth; the third and seventh have the same progressions as in Ex. 429.

Ex. 431.

Bach. Organ Toccata in F.



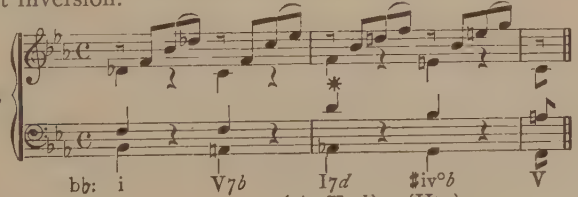
Bb: V7 *ic* IV*b* I7*c* V7*c* ♯iv°7 V7 I
(Eb: V7*c*) (II*b*9*b*)

The F in the bass is a pedal note. The third and seventh of the tonic seventh move as in Ex. 421 (*b*).

502. As this chord resolves, in all the examples yet given, on dominant harmony, we give for the last inversion two passages in which it resolves on the derivative of the supertonic discord; this resolution is oftenest met with when the tonic seventh is in the last inversion.

Handel. Hercules.

Ex. 432.

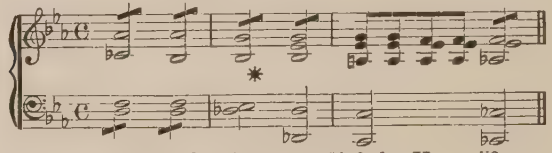


bb: i V7*b* I7*d* ♯iv°*b* V
(eb: V7*d*) (II7*c*)

Here the chord is resolved on the derivative of II7 explained in § 495. The part-writing, as is very often the case with Handel, is rather free, the thirds of the chromatic chords being doubled in the arpeggios of the upper part, in which the progression of the thirds is that shown in Ex. 422 (*b*). In our next example,

SCHUMANN. "Er, der herrlichste," Op. 42, No. 2.

Ex. 433.

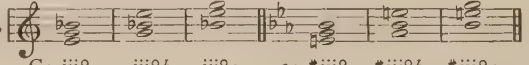


E♭: vii°♭7 V7*b* I7*d* ♯iv°7*b* II7*c* ii°7*c*
(e♭: vii°7) (A♭: V7*d*) (II9*c*) (e♭: V11*e*)

three of the five chords are derivatives of chromatic ninths or elevenths, which will be explained later. The analysis here given will present little difficulty to the student. Here is an interesting example of the third in the chord of the tonic seventh remaining stationary, as the seventh in the chord of the "leading seventh" of the dominant key. (Compare Ex. 423) (*a.*)

503. The derivatives of the tonic seventh will evidently contain the same intervals as those of the supertonic seventh (§ 495,) but the root will now be the mediant. In the minor key the root is chromatic, and we mark the chord ♯iii°, (§ 467). We now give the derivatives.

Ex. 434.



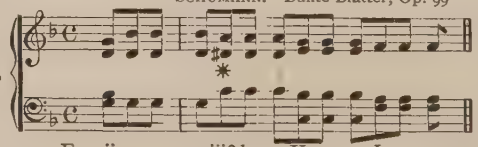
C: iii° iii°*b* iii°*c* c: ♯iii° ♯iii°*b* ♯iii°*c*
(I7*b*) (I7*c*) (I7*d*) (I7*b*) (I7*c*) (I7*d*)

It will be seen that all these chords are different positions of vii° of F major or minor, borrowed.

504. The derivatives of the tonic seventh are even more rarely to be met with than those of the supertonic seventh. We give two examples.

SCHUMANN. Bunte Blätter, Op. 99

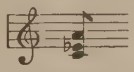
Ex. 435.



F: ii iii°*b* V7 I
(I7*c*)

This example is instructive as the first instance yet met with of incorrect notation. If the student will play the passage, he will feel at once that it is in the key of F. But D♯ is not a note of that key at all. The minor seventh of the tonic is E♭, and its enharmonic cannot belong to the key (§ 457). The note is

therefore really E♭, and the chord marked ✱ is properly

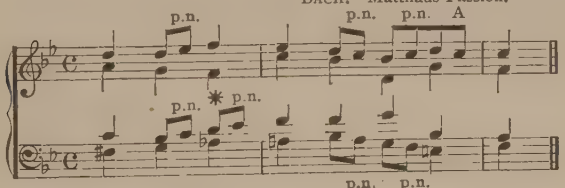


being the first inversion of the derivative of the tonic seventh. The reason Schumann has used the incorrect notation is because the seventh is resolved a semitone upwards. We shall see in the next chapter that this false notation is very common with chords of the minor ninth; but it is extremely rare with chords of the seventh.

505. The second inversion of this derivative is exceedingly rare. We give a fine example by Bach.

Bach. Matthäus Passion.

Ex. 436.



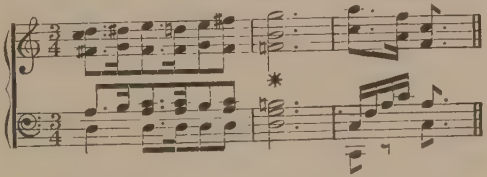
g: V7♭ i } B♭: iii°c V7♭ I vi (F: vii°7) V
B♭: vi } (I7d)

The C at the end of the second bar can either be considered an anticipation, as we have marked it, or the root of a transitional dominant, V7♭ in F.

506. In § 482 it was shown how a chromatic concord could be used for the purposes of modulation. The sevenths treated of in this chapter can also be so employed. Obviously if a supertonic or tonic seventh be quitted as a dominant seventh, it is to be regarded not as a chromatic chord, but as diatonic in the new key (§ 455). But a supertonic seventh may be quitted as a tonic seventh, or *vice versa*, the chord being chromatic in both keys. This method of modulation is not common, as it brings together two unrelated keys (§ 273), but it is occasionally to be met with, as in the following example.

Wagner. Die Meistersinger.

Ex. 437.



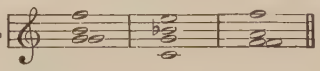
G: V7 V9 I7c } F: Ic
F: II7c }

Here what precedes shows that the first bar is in the key of G major. The chord ✱ is taken as the second inversion of the tonic seventh in that key, and left as the second inversion of

the supertonic seventh in F major.

507. There is another way in which chromatic sevenths can be used for the purpose of modulation. In Chapter XIV (§ 449,) it was seen that a chain of secondary sevenths could be written, each resolving on another seventh, the root of which was a fourth above its own. The same plan can be adopted with a series of fundamental sevenths. If, for example, the chord of the dominant seventh in C, instead of resolving on the triad of C major, resolves on a chord of the seventh on that note, that chord will be the dominant seventh of F, which may in its turn resolve on a dominant seventh of B flat, and so on indefinitely. A modulation is often made by taking a chord as a dominant seventh, and quitting it as a supertonic seventh, or (which comes to the same thing,) taking it as a tonic seventh and quitting it as a dominant. Thus the simple progression,

Ex. 438.



can either be analyzed as

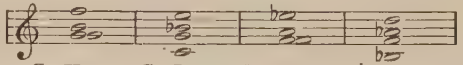
$$\left.\begin{matrix} C: V_7 \quad I_7 \\ F: V_7 \end{matrix}\right\} F: I$$

or as

$$\left.\begin{matrix} C: V_7 \\ F: II_7 \end{matrix}\right\} F: V_7 \quad I$$

Such modulations are frequent; if we continue the sequence, we shall have

Ex. 439.

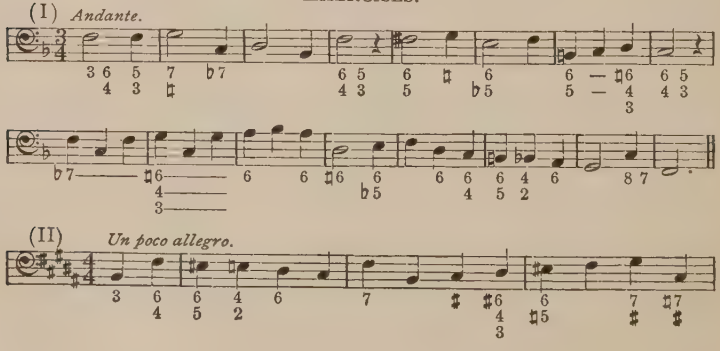


C: V7 C: I7 F: V7 } F: I7 Bb: V7 } Bb: I7 Eb: V7 } etc.

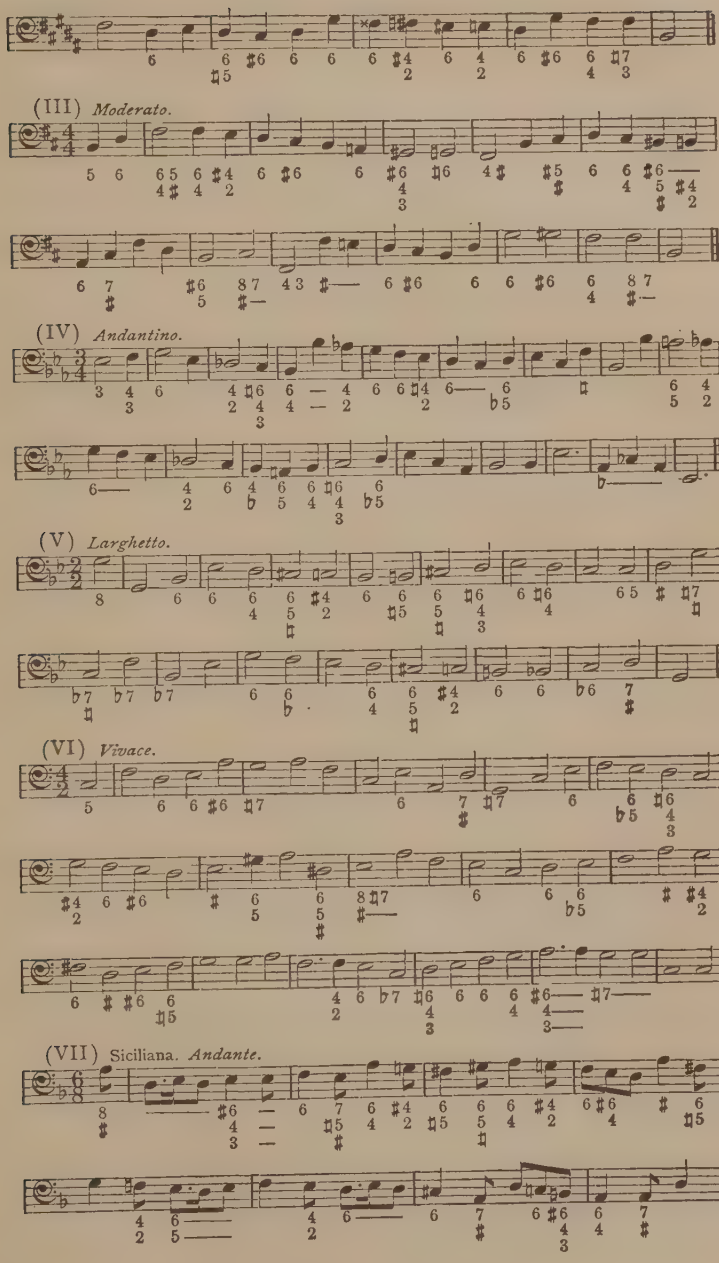
In such a passage it will be necessary, as with the secondary sevenths, to omit the fifth in each alternate chord.

Exercises.

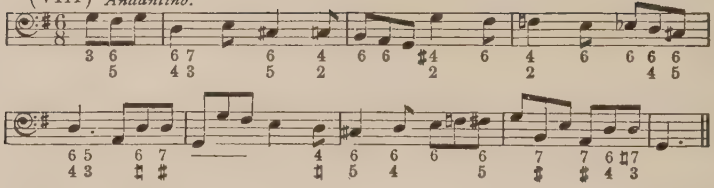
(I) *Andante.*



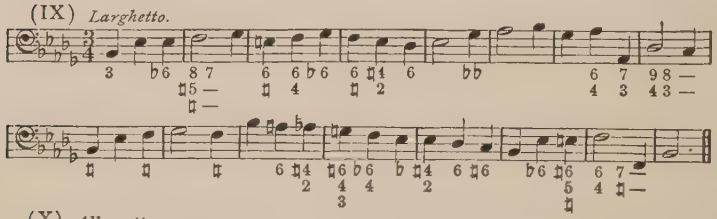
(II) *Un poco allegro.*


(III) Moderato.
(IV) Andantino.
(V) Larghetto.
(VI) Vivace.
(VII) Siciliana. Andante.

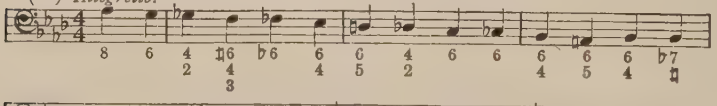
(VIII) *Andantino.*



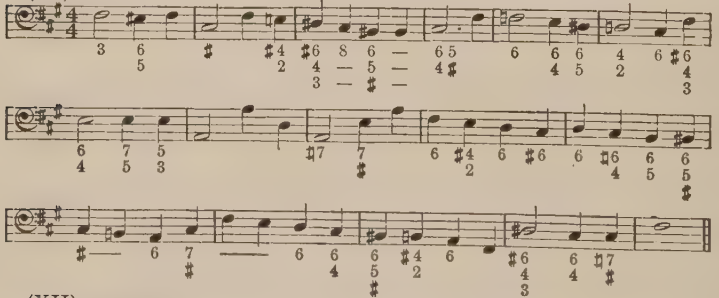
(IX) *Larghetto.*



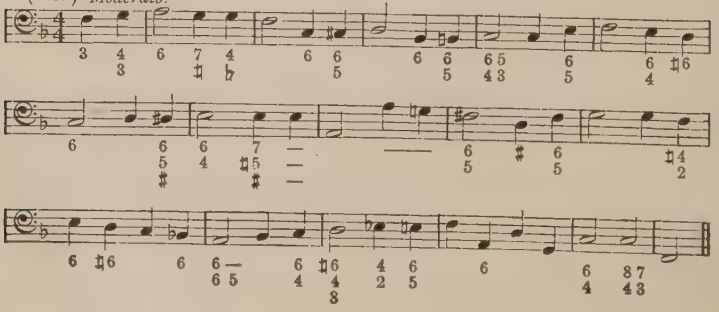
(X) *Allegretto.*



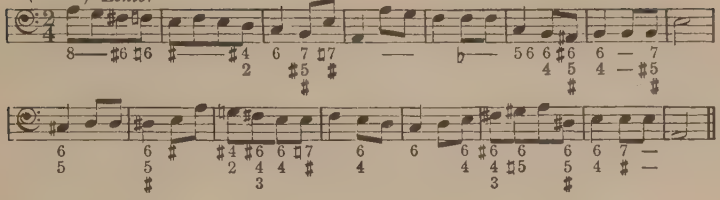
(XI) *Andante.*



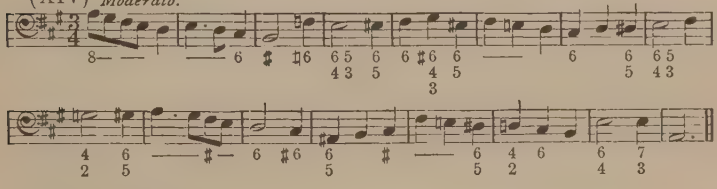
(XII) *Moderato.*



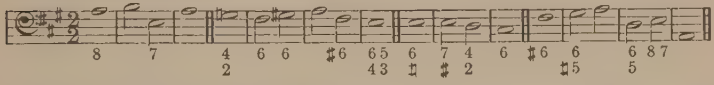
(XIII) *Lento.*



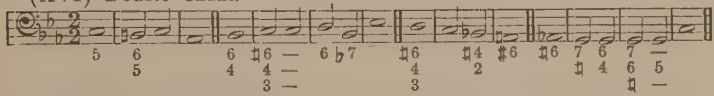
(XIV) *Moderato.*



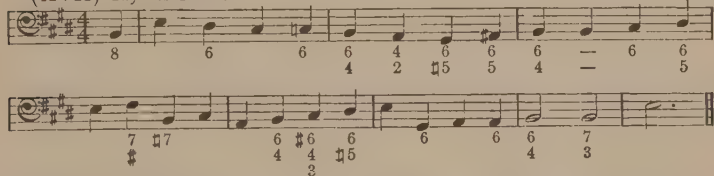
(XV) Double Chant.



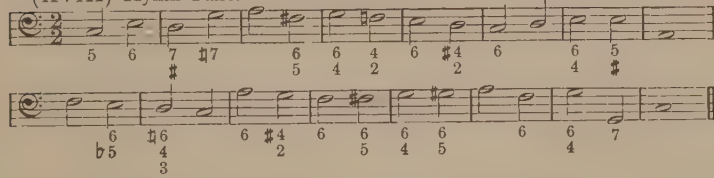
(XVI) Double Chant.



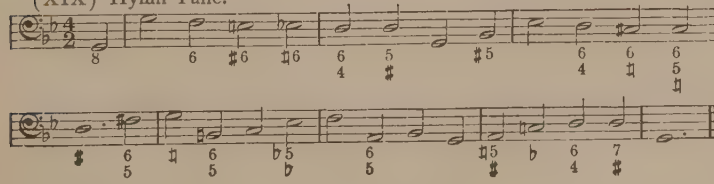
(XVII) Hymn Tune.



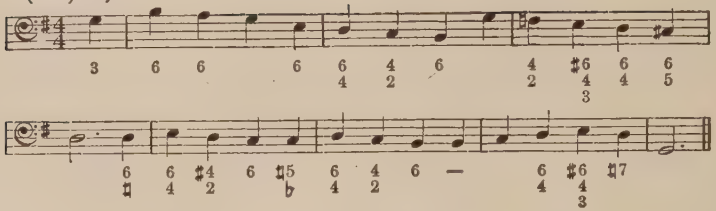
(XVIII) Hymn Tune.



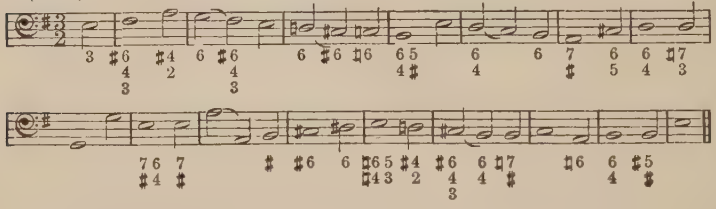
(XIX) Hymn Tune.



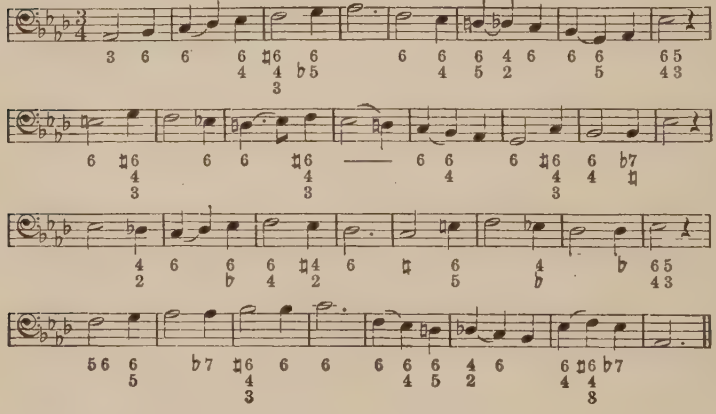
(XX) Hymn Tune.



(XXI) Hymn Tune.



(XXII) Hymn Tune.



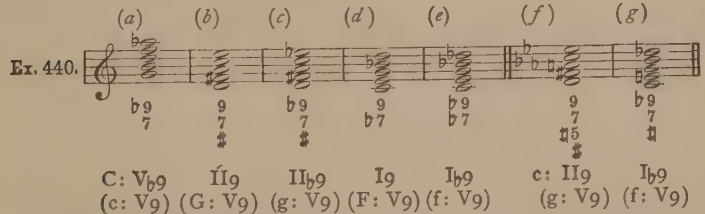
CHAPTER XVII.

CHROMATIC CHORDS OF THE NINTH—FALSE NOTATION—ENHARMONIC MODULATION.

508. In Chapter XII the chord of the dominant ninth was explained, and its treatment illustrated. We have also seen in our last chapter how chromatic chords of the seventh were only the dominant sevenths of the neighbouring keys not resolved into the keys from which they are borrowed. By similarly borrowing the chords of the dominant ninth of neighbouring keys, we obtain chromatic chords of the ninth.

509. It will be remembered that the chord of the dominant seventh (and therefore, of course, also of the supertonic and tonic sevenths,) is the same in major and minor keys. We also know that this is not the case with the chord of the dominant ninth, which has a major ninth in a major, and a minor ninth in a minor key. In speaking of chromatic triads, it was shown that, while in a minor key we could only borrow from neighbouring *minor* keys (§ 463), we could for major keys borrow from either major or minor keys (§ 479), provided always that we do not go beyond the neighbouring keys of the dominant and subdominant. Thus, for C minor, the only chromatic ninths available are *minor* ninths on the supertonic and tonic; but in C major we can employ the minor ninth on the dominant, and either major or minor ninths on the supertonic and tonic. We give a table of all the chromatic chords of the ninth, marking their harmonic derivations.

Ex. 440.

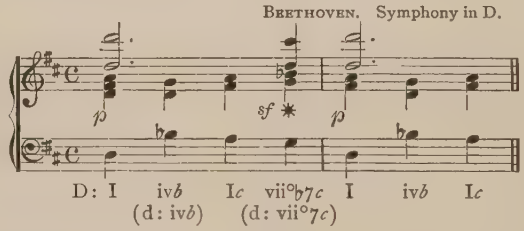


The chords are given in five parts, to show them complete; but, as with the dominant ninths, the fifth is mostly omitted in root-position. It must also be remembered that, in indicating the roots, when the ninth is itself a chromatic note, this must be shown by an accidental. Thus, the third chord here is marked II♭9; but its derivation is only g: V9, because in G minor E flat is not a chromatic note.

510. As being the simplest in its treatment, we first speak of the dominant minor ninth, used as a chromatic chord in a major key (Ex. 440 (*a*)). The minor ninth of the dominant is the minor sixth of the scale. In treating of the chromatic triads of the major key (Chap. XV,) we saw in Ex. 394 (*b*) (*e*) and (*g*) how this note was available in the concords; it is equally available as a note of a chromatic discord on the dominant. It is, however, comparatively seldom employed thus except in its derivative form as a chord of the diminished seventh, in which it is very common. An example of its introduction in its root-position will be seen in Ex. 299. In our quotation it is not seen to be a chromatic chord; but the fact that it is so is proved by the chord following our extract being that of C *major*, and not of C minor. When the chord is used chromatically, it will be most frequently followed by the tonic chord of the major key, though the chord of the ninth frequently resolves first, as here, upon its own root.

511. The derivatives of the minor ninth, vii°♭7 and ii°, (§§ 382, 392,) are, as said above, very frequently used chromatically. In Ex. 318 will be seen all the positions of vii°♭7 in the key of C major, the last resolving on the tonic chord. We now give an example of the same chord in its second inversion.

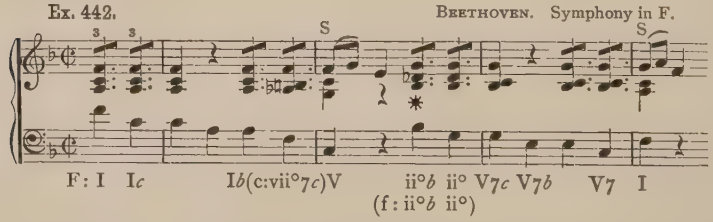
Ex. 441.



The D in the fourth chord is not a note of the harmony, but a pedal note in a middle voice. The progression of the bass illustrates what was said in § 385.

512. The other derivative, ii°, is seen in the following passage:—

Ex. 442.



The chromatic chord at the sixth crotchet is a transitional domi-

nant. The minor ninth in the derivative seen at * is resolved on its own root, and the resulting dominant seventh is followed by the tonic major chord.

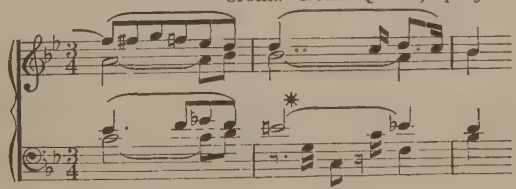
513. The chord of the dominant major ninth in the minor key is only possible as a "passing chord" (§ 310). In Ex. 298, at the end of the second bar is an A ♮, which is there explained as a passing note. The movement is here *Prestissimo*, and there are only two chords in the bar; in slow time, the progression would have made a passing chord. The occasions for its suitable introduction are very rare.

514. If a chromatic chord of the dominant ninth does not resolve upon its own root or upon the tonic chord, it will mostly resolve upon either a supertonic or a tonic discord—more frequently the former. An illustration of this will be seen in the second bar of Ex. 317, where the third inversion of the diminished seventh in B flat resolves on a derivative of the supertonic ninth in the same key.

515. The supertonic and tonic ninths are simply the dominant ninths of the dominant and subdominant keys borrowed, just as we saw in the last chapter was the case with the supertonic and tonic sevenths. Of these the supertonic ninth, like the supertonic seventh, is the more frequently used, though (like the dominant ninth,) far oftener as a derivative than with the root present. Only the supertonic *minor* ninth can be employed in minor keys (§ 509), but both major and minor ninths are available in major keys. As with the dominant ninth, all the notes up to and including the seventh of the chord follow the rules already given in the last chapter; it is only now needful to give rules for the treatment of the ninth itself.

516. If the chord of the supertonic ninth resolve upon its own root, the ninth will mostly fall a tone or a semitone to the root; it is possible also for it to rise to the third of the chord. It is, however, much rarer for a supertonic than for a dominant ninth to resolve on its own root. The following is a good example:—

Ex. 443.



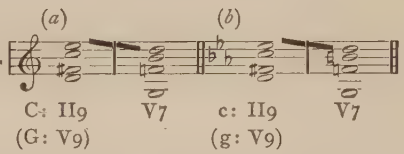
The analysis of these harmonies being by no means difficult, we leave the student to make his own; we simply point out that derivatives of both the diatonic and chromatic dominant ninths

are to be seen in the first bar, and that the second bar shows the supertonic major ninth resolved upon its own root. A derivative of the same chord, similarly resolved, will be seen at the fifth bar of Ex. 408.

517. When this chord resolves upon a chord having a different root, if the third of the supertonic chord rises a semitone, a tonic chord—either the common chord or a tonic discord—will follow; if the third in the supertonic chord falls a semitone, it will be resolved upon a dominant discord. If it resolves on a dominant *triad*, it ceases to be a true supertonic ninth, and becomes a "transitional dominant" (§ 295). These different resolutions of the chord will be seen in Exs. 287, 323, 422 (*a*), 423 (*a*) and 433. The student should observe that in every case it is *derivative* of II9 that is found; in its original position the chord is rare.

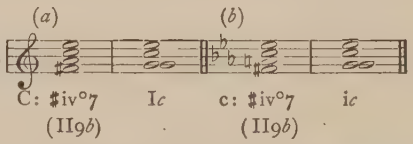
518. When resolved upon a dominant discord, the ninth of the supertonic chord will fall one degree—to the fifth of the dominant,—

Ex. 444.



but when resolved upon the tonic, the major ninth in a major key and the minor ninth in a minor key will remain as the third of the tonic chord.

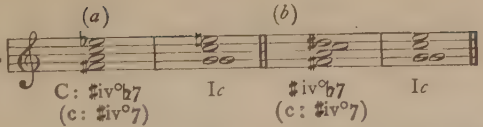
Ex. 445.



We have given a derivative of II9, as being much the more usual form. The student will have no difficulty in understanding the manner in which the roots of these derivatives are marked, if he will bear in mind that the root is here itself a chromatic note, and therefore requires an accidental (§ 467). The same thing was seen in the derivatives of the chromatic sevenths (§§ 495, 503).

519. If in a major key, the supertonic *minor* ninth is taken as a chromatic chord, and resolved on the tonic, the minor ninth should rise a chromatic semitone to the major third of the tonic chord. (See (*a*) below). In this case the ninth is frequently, though by no means invariably, written as an augmented octave of its generator, as at (*b*).

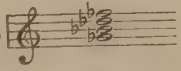
Ex. 446.



Here we meet again with an instance of FALSE NOTATION. (See § 504.) As this is often perplexing to students, we must enter into the question in some little detail. It will be first necessary to explain what is known as the *Law of the Sharpest Note*.

520. The sharpest note of any scale, or of any chord, is that which, *if regarded as a tonic*, would have the most sharps, or (which amounts to the same thing,) the fewest flats, in its key-signature. Thus G is a sharper note than C, and C is a sharper note than F. Obviously any sharp note is sharper than a natural, and any natural than a flat. If we compare two notes, both of which are sharps or flats, it is only necessary to remember their key-signatures to find which is the sharper. Thus at (*b*) of Ex. 446, D♯ is the sharpest note of the first chord, for it would have nine sharps in its signature (§ 56,) while F♯ would only have six. The same procedure applies with flats. Thus, in

Ex. 447.



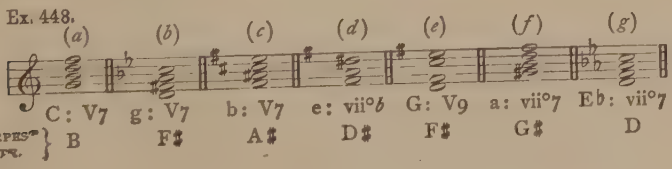
G flat has six flats, B flat has two, D flat five, and F flat eight in the key-signature. Therefore B flat, having the fewest flats, is the sharpest note of the chord.

521. We now give a table of all notes, excepting double sharps and double flats in the order of sharpness, beginning with the flattest. It will be seen that each note is a perfect fifth above that which precedes it, and that flats, naturals and sharps follow each other in the same order.

FLATS.	F♭, C♭, G♭, D♭, A♭, E♭, B♭.
NATURALS.	F, C, G, D, A, E, B.
SHARPS.	F♯, C♯, G♯, D♯, A♯, E♯, B♯.

522. We will now take a few chords of the seventh and ninth, both with and without their generators, and ascertain which is the sharpest note.

Ex. 448.

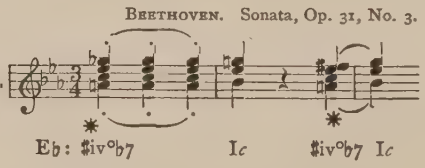


It will be seen that in every case the sharpest note is the leading note of the key, and that the dominant, from which, as we already know (§ 417), every diatonic discord is derived, is a major third below that sharpest note. The simple rule for our guidance is, *The sharpest note is always the third of the original chord.* It must be understood that this rule does not apply to those derivatives of fundamental chords in which the third is not present, such as ii°, ii7, or IV7; but for these it will not be needed, because here false notation is not likely to be met with.* But with chords of the seventh and ninth, this rule will be found extremely useful.

523. We shall now show how the application of the rule just given will enable us infallibly to detect false notation of the minor ninth. Look again at the first chord in Ex. 446 (*b*). Here D♯ is the sharpest note; the chord is therefore derived from B, which is the dominant of E. But its resolution on the tonic chord of C proves it to be chromatic in that key (§ 464), and the only keys from which we can borrow chromatic chords for C are F and G. The fact that the chord in question, *as written*, comes not from F or G but from E, proves false notation, because E is not a "borrowing key" for C. Whenever false notation occurs, it is always *the sharpest note* which needs to be changed. In the present case D♯ must be enharmonically changed to E♭, as in Ex. 446 (*a*). F♯ is now the sharpest note, and we have a derivative of the dominant minor ninth of G, that is, a supertonic minor ninth in C.

524. The false notation of which we have been speaking is never employed when the minor ninth falls, but only when it rises a chromatic semitone, and not always then. The irregularity of its notation is well shown in the following passage:—

Ex. 449.



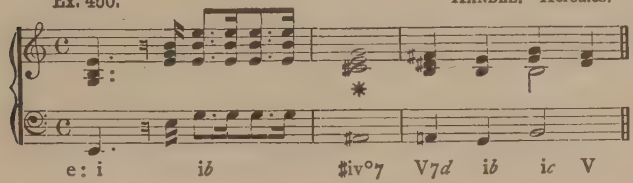
Here the same chord, *with the same resolution*, is written first with the correct, and then directly afterwards with the false notation.

525. We now give some examples of the use of II9 as a chromatic chord. These will all be derivatives; it has been

* Excepting possibly in the chromatic chord IV♭7, which will be spoken of in the next chapter.

already said that the employment of the chord in its root-position is rare. Our first examples are by Handel.

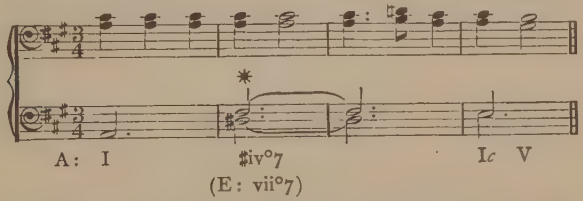
Ex. 450. Handel. Hercules.



Here the minor ninth (G,) falls a semitone, and the chord resolves on the third inversion of the dominant seventh. In our next quotation,

Handel. Israel in Egypt.

Ex. 451.

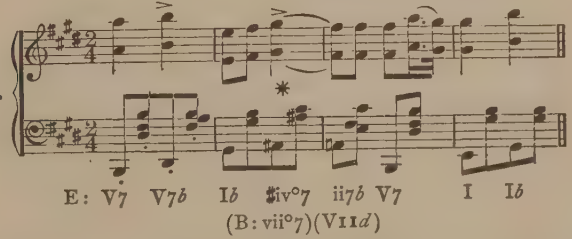


the supertonic major ninth resolves on the tonic chord; the ninth therefore remains as the third of the chord (§ 518). It is interesting to note here that the auxiliary note, D♮, in the third bar makes no false relation with the D♯ in the bass (§ 323); it further proves the key of the passage to be A major, not E major (§ 307). It is often possible to decide the key of a passage by observing the auxiliary and passing notes.

526. Our next extract shows a different resolution:—

Schubert. Sonata. Op. 164.

Ex 452.

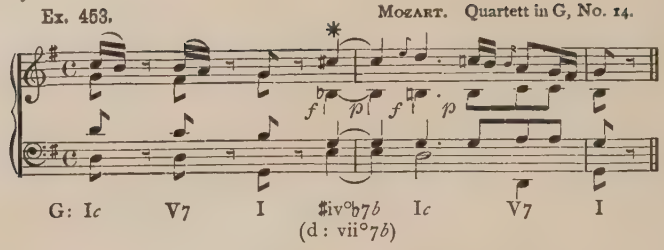


Here ♯iv°7 is resolved upon a derivative of the dominant eleventh.

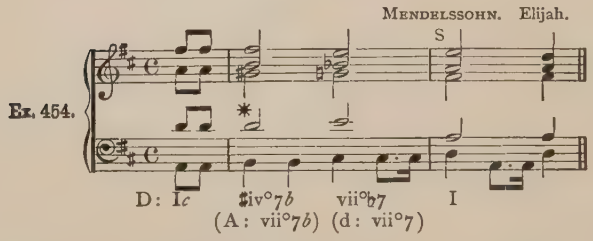
527. We now show the inversions of ♯iv°7, most of which will need no further explanation than is furnished by their

analysis.

Ex. 453.

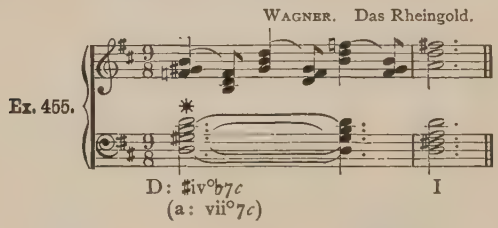


Ex. 454.

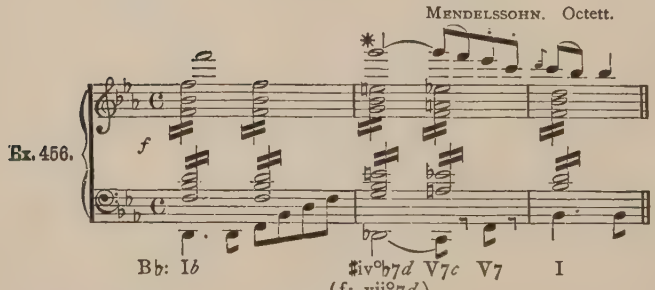


Here ♯iv°7♭ resolves on a derivative of a *chromatic* dominant ninth.

Ex. 455.



Ex. 456.

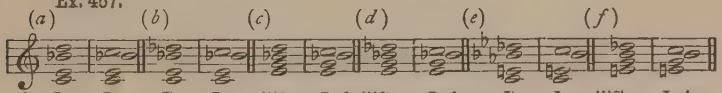


It will be seen that in our analyses we mark below the derivatives ♯iv°7, not the II9, as hitherto, but vii°7 in the key from which they are borrowed. We purposely use sometimes one, and sometimes the other analysis, that the student may accustom himself to both.

528. The chord of the tonic ninth, shown in Ex. 440 (*d*) (*e*) and (*g*) is, in its original form—with the generator present—even rarer than the same form of the supertonic ninth. It is almost always found as the derivative, iii°7 (in the minor key ♯iii°7—compare § 503). Like the supertonic ninth, it can resolve either upon its own, or upon a different root, the latter being by far the more common. If not resolved upon its own root (*i.e.*, generator,) the tonic ninth, like the tonic seventh (§ 496,) should resolve either on a dominant or supertonic *discord.*

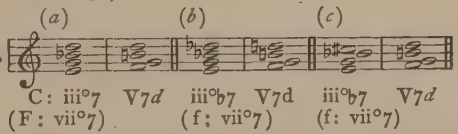
529. If the ninth resolve on its own root, the rest of the chord will remain, and we shall have a tonic seventh, which will also require resolution.

Ex. 457.



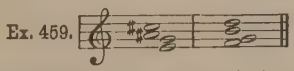
If a tonic ninth, or its derivative, resolve upon a dominant discord, the ninth, if it be major, will remain as the fifth of the next chord, and if it be minor, will rise a chromatic semitone. The former progression is rare; the latter is common, and in this case the same false notation already seen with the supertonic minor ninth (§ 519,) is often employed. (Compare (*b*) and (*c*) of the following.)

Ex. 458.



530. The false notation at (*c*) can be detected by the method shown in § 523. But with this chord it is by no means uncommon to find that if the minor ninth is falsely noted, so also is the minor seventh. Probably to save accidentals in the resolution, the progression at (*c*) is often thus—

Ex. 459.

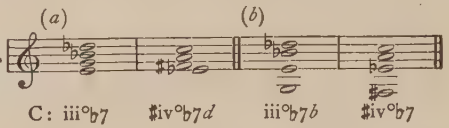


To find the true nature of this chord, it will be needful to apply the law of the sharpest note twice. A♯ is here the sharpest note, indicating the key of B minor—not a borrowing key for C. When we change this note to B♭, C♯ remains the sharpest note, showing D minor. This must also be changed to D♭, when the chord is seen to be the diminished seventh in F minor, borrowed as iii°♭7 in C major or minor, as the case may be.

531. If the chord of the tonic ninth resolve on a supertonic

discord, the ninth will fall one degree. It is, however, very rare for a major ninth to be so resolved.*

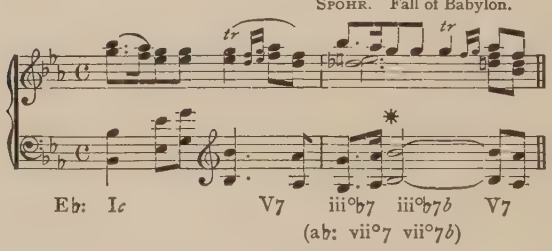
Ex. 460.



532. We now give examples of the employment of the tonic ninth by the great masters. These will all show derivatives of the chord; for, although the original position is possible, it is so seldom used that we are unable to give an instance of it in actual composition. We first show iii° ♭7 and iii° ♭7♭, with the resolution of the latter on a dominant seventh.

Spohr. Fall of Babylon.

Ex. 461.

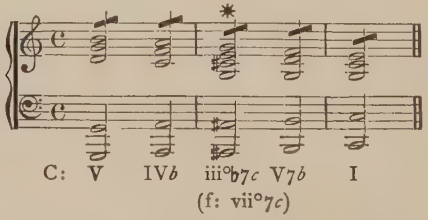


Note here the false notation,—E ♮ for F ♭.

533. Our next illustration shows the second inversion of iii°♭7.

Schumann. Song—"Ich grolle nicht." Op. 48, No. 7.

Ex. 462.



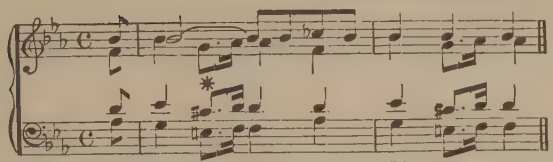
Here is seen an instance of the double false notation spoken of in § 530. The A ♯ and C ♯ are proved by the resolution of the chord to be really B ♭ and D ♭. In Ex. 435 of the last chapter we saw a derivative of the tonic seventh (iii°♭), in which Schumann had also written the minor seventh as an augmented sixth from the generator.

634. The last inversion of the same chord is seen in the following:—

* For an instance, see Ex. 465, within

Spohr. Fall of Babylon.

Ex. 463.



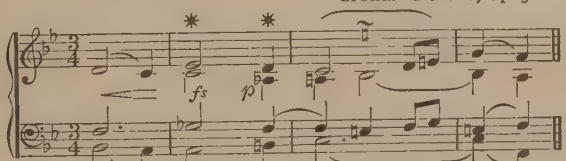
E♭: V7*d* I*b* iii°♭7*d* V7*c* vii°♭7*c* I*b*
(a♭: vii°7*d*) (V♭9*d*)

Here we have not only the derivative of the tonic ninth, but also, at the end of the first bar, the derivative of a chromatic dominant ninth. Observe again the double false notation in iii°♭7.

535. In all the examples hitherto given the tonic ninth has resolved upon a dominant discord. This is its most usual progression; we now show its resolution upon a supertonic ninth:—

Spohr. Nonetto, Op. 31.

Ex. 464.

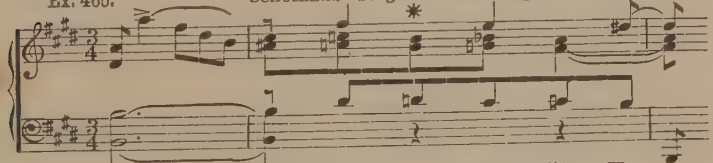


B♭: I V*b* vii°♭7 } F: ♯iv°♭7 Ic V7 I
F: iii°♭7 }

This passage is instructive, because it shows a modulation effected by means of the diminished seventh. The third chord is taken as dominant harmony in B flat, but its resolution shows that it is quitted as the derivative of a tonic ninth in F.

536. The tonic major ninth and its derivatives are rarer than the minor ninth, which has been seen in all the passages yet quoted. We now give one example of iii°7, the derivative of the major ninth.

Ex. 465. Schumann. Song.—"Schöne Wiege." Op. 26, No. 5.



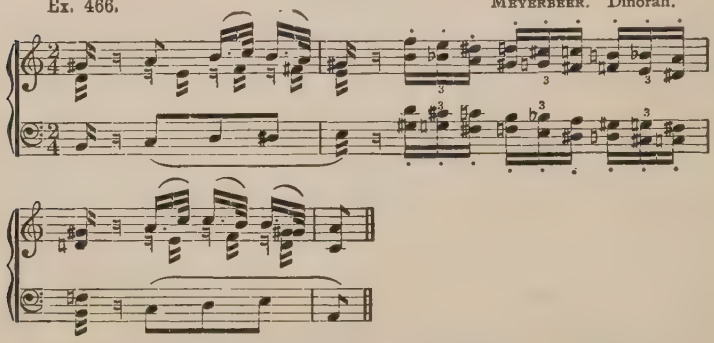
E: V7 II vii°♭7 iii°7*c* ♯iv°♭7*b* ii°7*c* V7
(e: vii7)(A: vii°7*c*)(b: vii°7*b*)(e: V11*e*)

Here are seen all the chromatic ninths in turn. The second bar is over a dominant pedal; the first chord is an *incomplete* chromatic triad on the supertonic, the root not appearing till the change of harmony at the second quaver. Notice the very unusual false notation at the fourth quaver, where B♭ is written

for A♯, because it is resolved downwards, and compare what was said in § 460 on the notation of the chromatic scale.

537. It is not uncommon to meet with a succession of sevenths over a bass ascending or descending chromatically, as in our last example; generally, however, all the sevenths will be diminished, as in the following passage:—

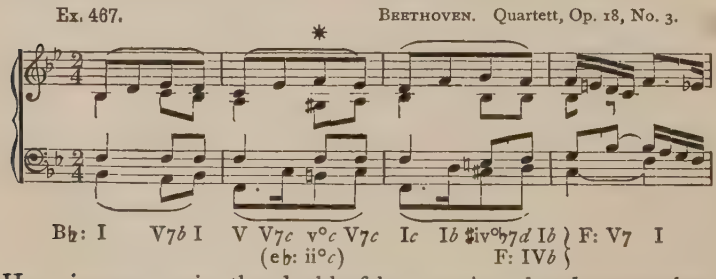
Ex. 466. Meyerbeer. Dinorah.



To save space, we have omitted the usual analysis of this passage under the bass. In order to make the progression of the harmony in the second bar easier to the student, we have given each chord with its correct notation. Meyerbeer has written them in a very promiscuous manner. The first diminished seventh is the derivative of the dominant minor ninth; this resolves on the second inversion of the derivative of the tonic minor ninth, which again is followed by the first inversion of that of the supertonic minor ninth; then the series (dominant, tonic, supertonic) recommences, but each time in a different position. The music continues in A minor throughout.

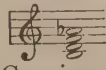
538. The second derivative of the minor ninth, ii°, is very seldom used except for dominant harmony. We have seen it in Ex. 442 thus employed. As a derivative of the supertonic and tonic ninths, it would be vi° and v° respectively. We give one example—the only one we can recall—of the latter.

Ex. 467. Beethoven. Quartett, Op. 18, No. 3.



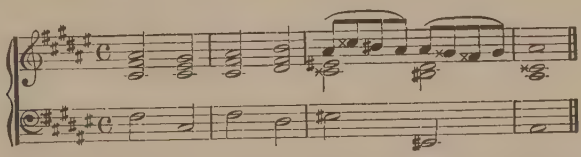
Here is seen again the double false notation already more than

once pointed out.

539. The chord of the diminished seventh is of great importance from its use in modulation. We have already seen (Chap. IX,) how to modulate by taking a chord as belonging to one key, and quitting it as a different chord of another key. Clearly we can apply the same method to the chord now under consideration. For instance, the chord  may be the derivative of a dominant minor ninth in C major or minor, of a supertonic minor ninth in F major or minor, or of a tonic minor ninth in G major or minor. It is evident that it may be taken in any one of these keys, and left in any other of the six. But its utility for the purposes of modulation by no means ends here. A little explanation is necessary to enable us to understand its further use.

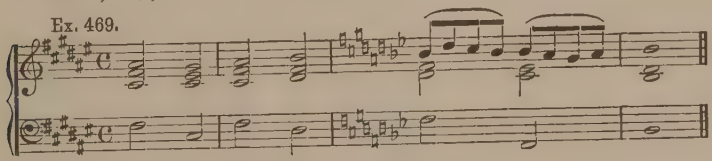
540. It has been already said (§ 308) that two notes which are enharmonics of one another (*e.g.* G♯ and A♭), can never both be used in the same key; it was also mentioned (§ 49) that, to avoid the use of double sharps and double flats, an enharmonic change of notation was not infrequently employed, especially in "extreme keys," that is, keys with many flats or sharps in the signature. If, for instance, being in the key of F♯ major, we wish to modulate to the mediant of that key (A♯) which would have ten sharps (three double sharps) in the signature, it would make the music difficult to read were it written thus—

Ex. 468.



Even an experienced player might stumble at first sight over such a passage. It is therefore much more convenient to mark a change of signature, and substitute for the key of A♯ its enharmonic, B♭, as follows—

Ex. 469.



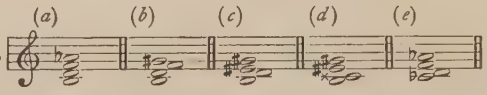
The passage is now perfectly easy to read.

541. It must be especially noticed that here the change of notation makes no difference whatever in the progression of the harmonies. Every chord is exactly the same as before. If the

student will transpose the above passage a semitone higher or lower, he will find that no change is required. We have here therefore simply an *enharmonic change of notation.*

542. If, however, by enharmonically altering one or more of the notes of a chord we change the harmonic origin of the chord, so that its altered notation induces a different progression of the harmony, we get an *enharmonic modulation;* and the chord of the minor ninth lends itself to this process more readily than any other. If, for instance, we take the chord given in § 539, we can change any of its notes enharmonically; each change alters the nature of the chord, and gives it a new generator.

Ex. 470.



We have already seen that the chord at (*a*) is the derivative of the minor ninth of G, and belongs to the keys of C major, C minor, F major, F minor, G major, and G minor. If now for A♭ we substitute G♯—as at (*b*)—the nature of the chord is changed. It is no longer derived from G, but it is the first inversion of the derivative of the minor ninth of E, and is dominant in A major and A minor, supertonic in D major and D minor, and tonic in E major and E minor.

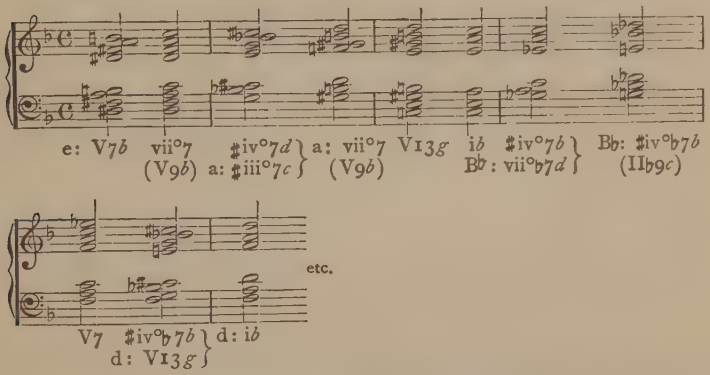
543. Now take E♯ instead of F♮, as at (*c*), and the chord becomes the second inversion of the derivative of the minor ninth of C♯, and evidently belongs to the keys of F♯ major and minor, B major and minor, and C♯ major and minor. Again changing D♮ to C×, the chord is the third inversion of the derivative of the minor ninth of A♯, (*d*). It now belongs to the keys of D♯ major and minor, G♯ major and minor, and A♯ major and minor. As these three major keys are very rarely used, their enharmonics, E♭, A♭, and B♭, being employed instead, the chord is for these keys written as at (*e*) where it is the last inversion of the minor ninth of B♭. It should be noticed that while between each of the chords (*a*) (*b*) (*c*) and (*d*) there is an enharmonic *modulation*, there is only an enharmonic *change of notation* between (*d*) and (*e*) as the generator A♯ of (*d*) is the enharmonic of the generator B♭ of (*e*) and *every* note of the chord is changed.

544. It will thus be seen that any chord of the diminished seventh can be used, by enharmonic modulation in every key, being taken in its relation to the key quitted, and resolved (as dominant, supertonic, or tonic) in the new key entered. When a modulation is thus effected, it is usual to write the chord in the notation of the key which is being approached, rather than

in that which is quitted, though either may be adopted at the pleasure of the composer.

545. One of the most magnificent examples of enharmonic modulation by means of the chord of the diminished seventh will be seen in the following passage by Bach. The analysis given below it will require, but will also repay, very close attention from the student.

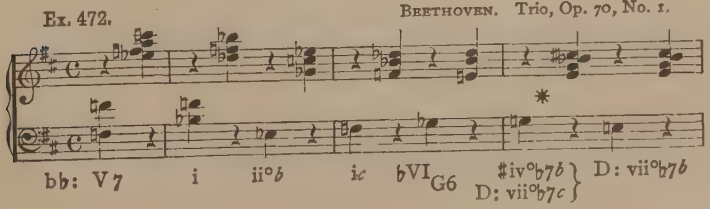
Ex. 471. Bach. Chromatic Fantasia.

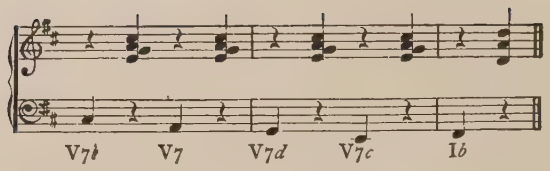


Few remarks are needed. In every modulation the diminished seventh is written in the notation of the key which is being approached. The passage marked as being in B flat major, could also have been regarded as in B flat minor; we have considered it as in the major key, because this is so much less remote from the keys that precede and follow it. One point more must be noted. In the last chord but one the F in the bass is no part of the ♯iv°♭7♭ in B flat; it is *taken* as a dominant pedal in B flat, but quitted as a note of the harmony in D minor. Observe that the progression of the different parts is, as often with Bach, very free.

546. We will now give a more modern example of the same method, showing how enharmonic modulation can be used to connect two very remote keys.

Ex. 472. Beethoven. Trio, Op. 70, No. 1.

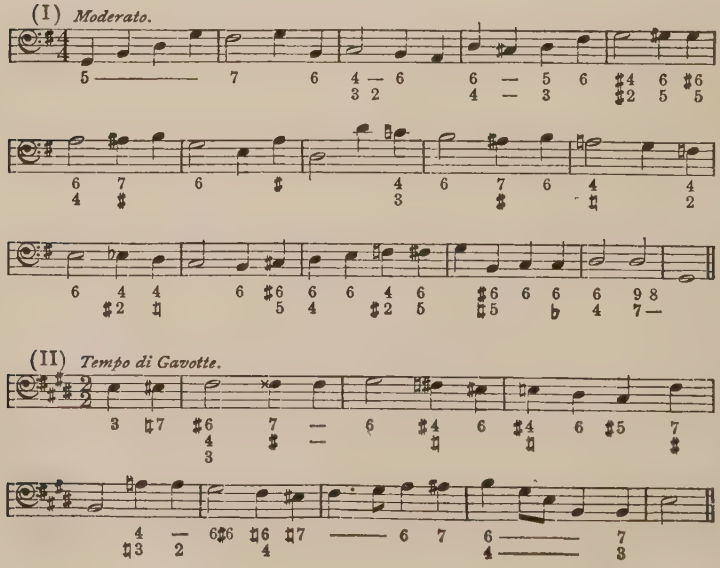




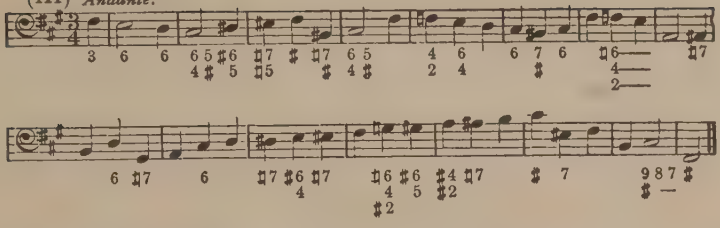
This passage begins in B♭ minor. The fifth chord has not yet been studied. It is a "German sixth," which will be explained in Chapter XIX. At * the first chord is taken (with D♭) as a derivative of the supertonic minor ninth in that key (generator C); then by the enharmonic change from D♭ to C♯ the generator changes to A, and the chord becomes a derivative of the dominant minor ninth of D. The ninth resolves on its root in the following bar, and the dominant seventh which remains is resolved, after several changes of position, on the tonic chord.

547. While the chord under consideration offers an easy means of modulation to any key, it is well to warn young composers not to use it too freely for this purpose. A modulation to a remote key can often be quite as well effected by some other means, and the too frequent use of diminished sevenths soon becomes monotonous, and palls on the ear. To modulate almost exclusively by this chord would show great poverty of invention.

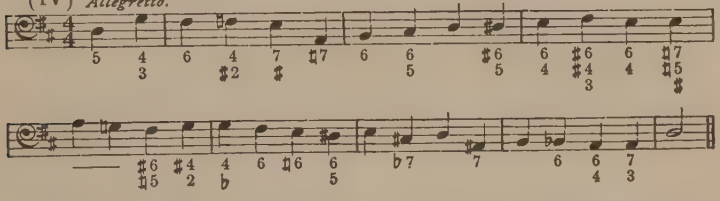
EXERCISES.



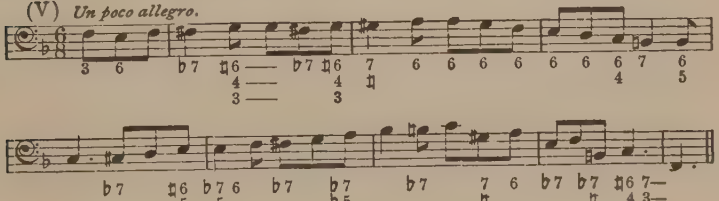
(III) *Andante.*



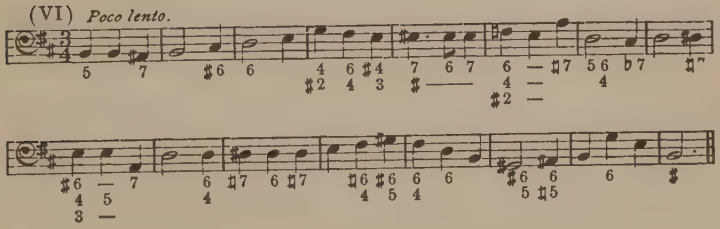
(IV) *Allegretto.*



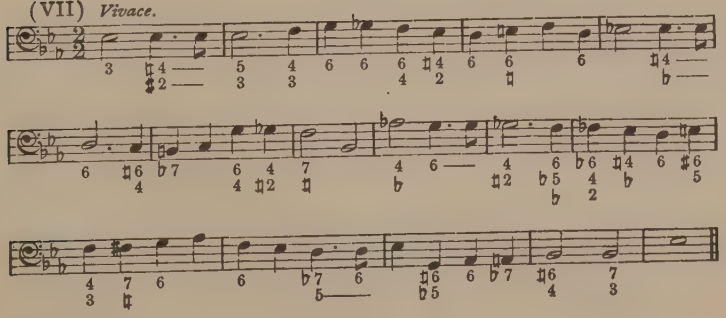
(V) *Un poco allegro.*



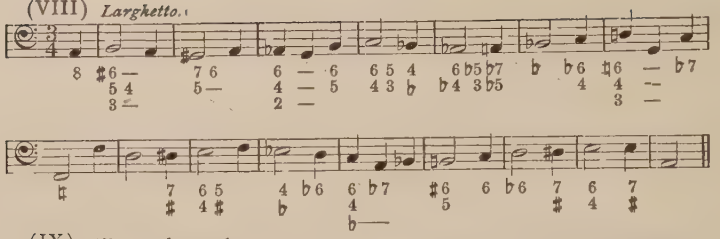
(VI) *Poco lento.*



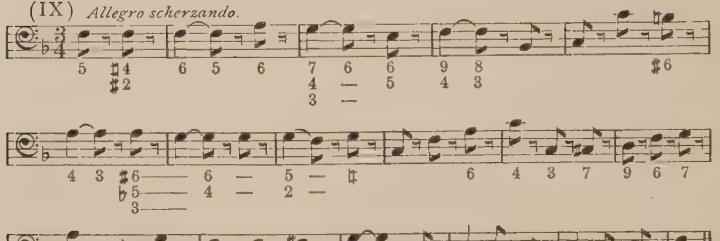
(VII) *Vivace.*



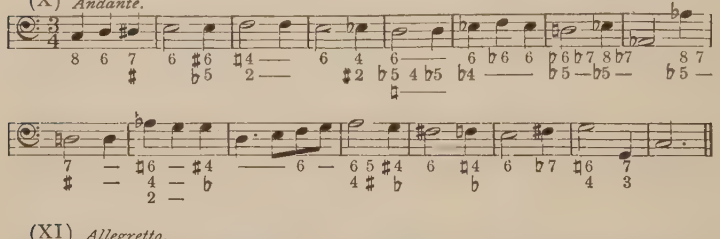
(VIII) *Larghetto.*



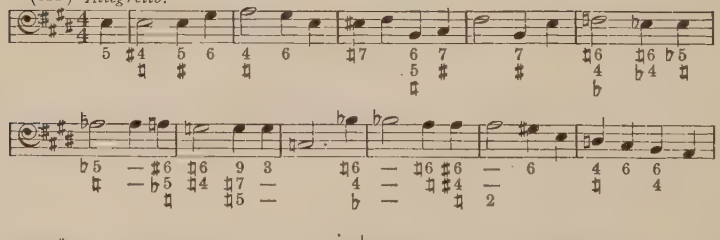
(IX) *Allegro scherzando.*



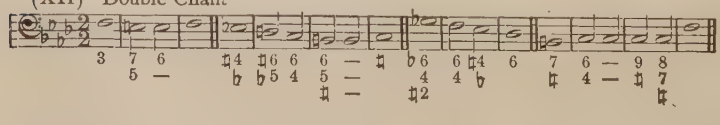
(X) *Andante.*



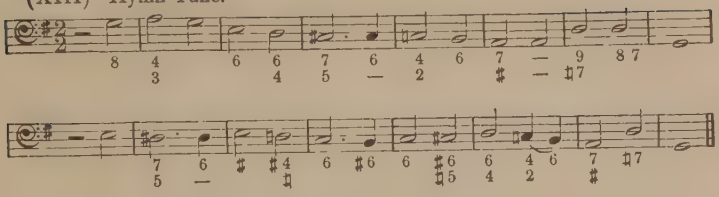
(XI) *Allegretto.*



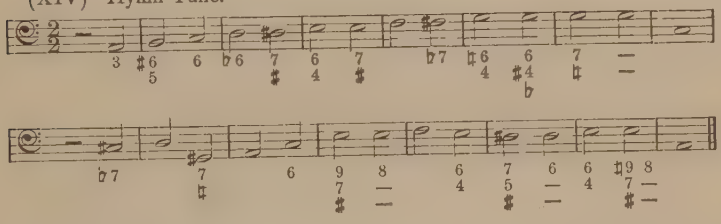
(XII) Double Chant



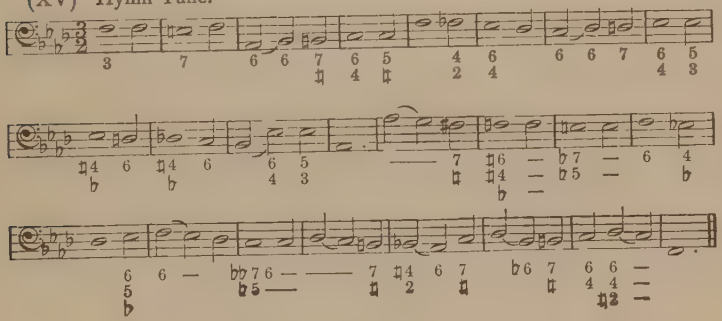
(XIII) Hymn Tune.



(XIV) Hymn Tune.



(XV) Hymn Tune.



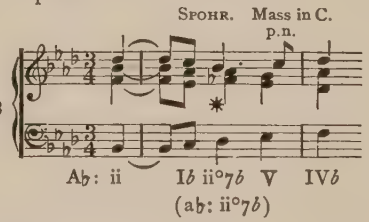
CHAPTER XVIII.

CHROMATIC CHORDS OF THE ELEVENTH AND THIRTEENTH.

548. The higher chromatic discords (elevenths and thirteenths,) of which we have now to speak, are much less frequently employed than the chromatic chords of the seventh and ninth treated of in the last two chapters. The elevenths indeed are, with one exception, so rare that they may be almost said to be non-existent. We shall deal first with these, before proceeding to the more elaborate chords of the thirteenth.

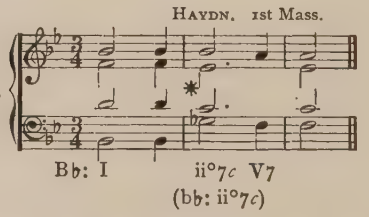
549. The one exception mentioned just now is that of the dominant eleventh with a *minor* ninth, used as a chromatic chord in a major key. We saw in the last chapter (§ 510,) how the chord of the minor ninth was often employed in this manner; and, like that chord, the present is far more frequently found as a derivative than with the dominant present. We already know (§ 406,) that the derivatives of the dominant eleventh in the minor key are ii°7 and its inversions. In Ex. 274 will be seen ii°7*b*, and in Ex. 465, ii°7*c* taken in a major key; in both cases the chord is treated as a passing chord. But it can also be substituted for the diatonic chord, ii7, as in the following example:—

Ex. 473



550. Our next illustrations show the second inversion of the chord.

Ex. 474.

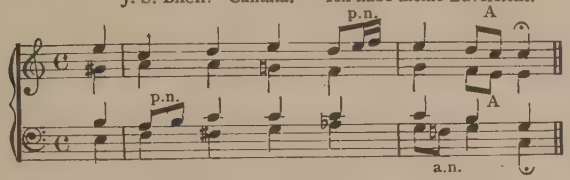


Here the chromatic note falls a semitone, and the chord resolves

on V7. In the following passage it resolves on I*c*.

J. S. Bach. Cantata.—"Ich habe meine Zuversicht."

Ex. 475.

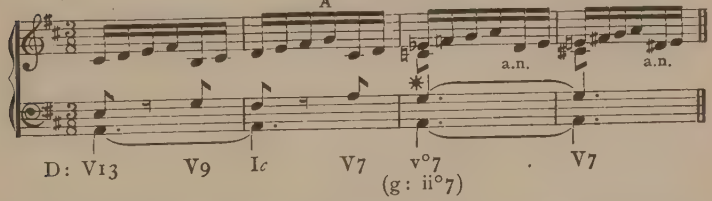


a: V VI) C: II7*b* I*c* ii°7*c* I*c* V7 I
C: IV) (G: V7*b*) (c: ii°7*c*)

If the student will look at Ex. 342, he will see the diatonic chord II7*c* with the same resolution. No new rules beyond those given in Chapter XIII will be needed for the treatment of this chord, but it must of course be resolved, like all other chromatic chords, in the key into which it is borrowed—here, in a major and not a minor key.

551. The chords of the tonic and supertonic eleventh are so extremely rare that very few words need be said about them. They are very seldom, if ever, to be found excepting as derivatives, and the derivative of II11, is, as will be seen directly, ambiguous in its very nature. We first give an interesting example of v°7, the derivative of I$^{\flat 9}_{11}$.

476. Wagner. Die Meistersinger.



D: V13 V9 I*c* V7 v°7 V7
(g: ii°7)

The analysis of this passage is instructive. Let the student particularly notice the passing and auxiliary notes. The fourth semiquaver of the second bar is evidently an anticipation of the following dominant harmony. Observe that in the last bar the F♯ proves the key to be D major, and not D minor.

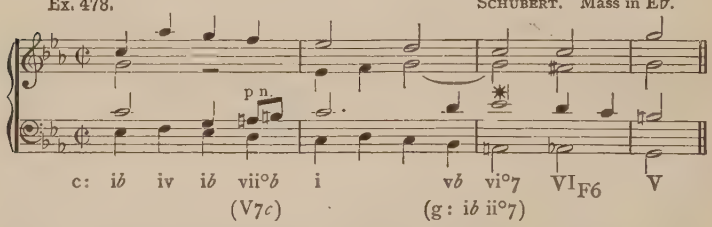
552. It was said just now that the derivative of II11, which a moment's thought will show the student must be vi7 or vi°7—that is ii7 or ii°7 of the dominant key, according as the ninth is major or minor,—is in its nature ambiguous. We show both forms of the chord in the key of C.

Ex. 477.

C: vi7 vi°7

It will be noticed that the first of these two chords is diatonic, and it has already been given as a rule (§ 417,) that every diatonic discord in a key is derived from the dominant. The chord (*a*) above may therefore equally be regarded as the ninth, eleventh, thirteenth and generator of the dominant chord (Compare § 445), or as the fifth, seventh, ninth and eleventh of the supertonic chord. The chord (*b*) might also be a chord of the minor thirteenth in C major (V♭13*e*), as well as the derivative of a chromatic supertonic eleventh. The note characteristic of supertonic discords—the leading note of the dominant key—is evidently unavailable here, because that is the note on which the eleventh would resolve (§ 375). Yet occasionally progressions are found in which the *mental effect* produced is decidedly that of supertonic rather than of dominant harmony. This is more particularly the case when the vi7 resolves upon a chord containing the leading note of the dominant key, as in the following passage:—

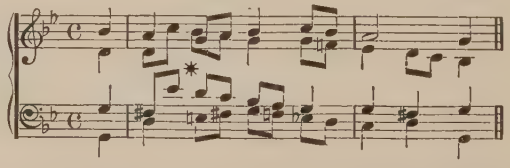
Ex. 478. SCHUBERT. Mass in E♭.



Here the chord ✱ suggests G minor rather than C minor, though the A♮ might be a chromatic passing note in the latter key. If the chord on which vi°7 resolves does not contain the major third of the supertonic, as in our next example,—

J. S. BACH. Cantata.—"Ach lieben Christen, seid getrost."

Ex. 479.

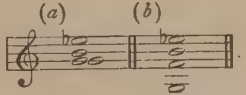


the case is more doubtful; the chord ✱ can be analyzed either as a derivative of II11*c* or of V13*e*. These progressions are
9
so rare that it is unnecessary to say more about them.

553. Chromatic chords of the thirteenth are, like those of the eleventh, more frequently met with as dominant than as tonic or supertonic chords. But they differ from the chromatic elevenths in that they are quite as often found with as without the generator present. The forms generally employed are those

seen in §§ 428, 434.

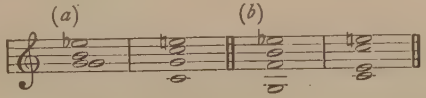
Ex. 480.



C: V♭13 V♭13
(c: V13) (c: V13)

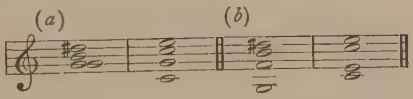
554. Unlike the diatonic chord, a chromatic dominant minor thirteenth never resolves upon its own generator. By far its most common resolution is on the tonic chord.

Ex. 481.



Here the thirteenth rises a chromatic semitone to the third of the tonic. In the last chapter we saw (§ 519,) the minor ninth of the supertonic, when chromatic in a major key, resolved in the same way; and it was pointed out that the chromatic note was often written as an augmented octave, instead of a minor ninth, above the generator. In precisely the same way, the minor thirteenths in our last example are almost always written as augmented fifths:—

Ex. 482.

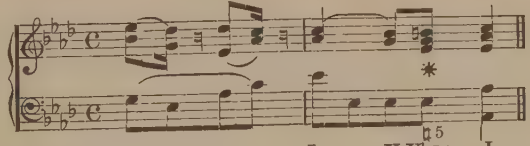


The false notation can be detected, as explained in § 523, by applying the Law of the Sharpest Note (§ 520).

555. The following passages show the minor thirteenth, both with and without the seventh, in a major key, and resolved on a tonic chord.

Ex. 483.

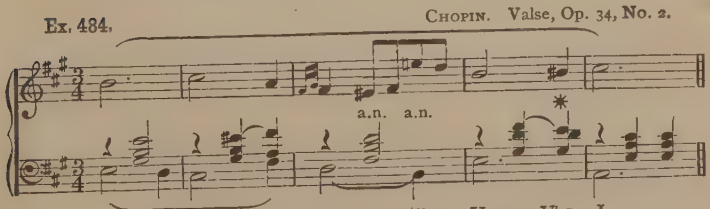
Beethoven. Sonata, Op. 30, No 2.



A♭: V♭ V7 I Ic V V♭13 I

Ex. 484.

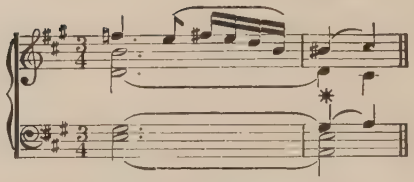
Chopin. Valse, Op. 34, No. 2.



A: V V7d (f♯: V7) vi ii♭ ii V9 V♭13 I

SPOHR. Jessonda.

Ex. 485.

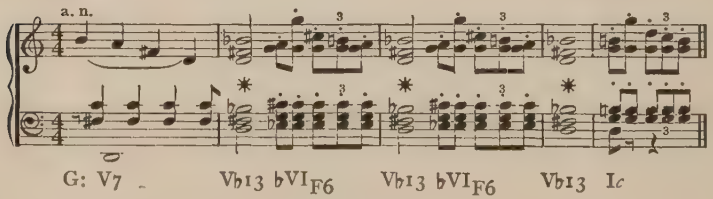


A: V♭9 V9 V7 V♭13 I
(T.P.)

No further explanation will be necessary than is furnished by the analysis of these examples; the T.P. in the second bar of Ex. 485 indicates that the A in the first chord does not form part of the chord, but is a "Tonic Pedal" (see Chapter XX). If the A were here the eleventh of the dominant chord, it would not remain stationary while the lower notes of the chord (the third and seventh,) were resolved.

556. In the rare instances in which the dominant minor thirteenth resolves otherwise than on a tonic chord, the thirteenth will fall a semitone; in this case, as with the minor ninth, false notation will not be used. We give an interesting example by Wagner:—

Ex. 486. WAGNER. Die Meistersinger.

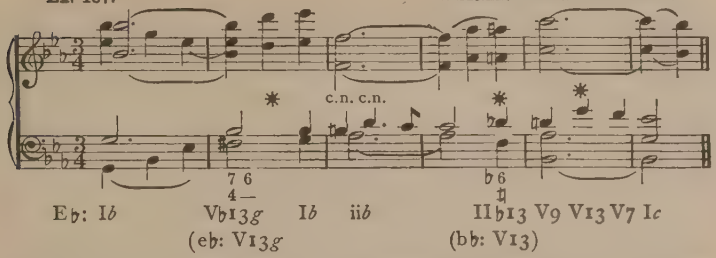


G: V7 V♭13 ♭VI$_{F6}$ V♭13 ♭VI$_{F6}$ V♭13 I*c*

In this passage the chord V♭13 resolves at its first and second appearance on a chord of the augmented sixth (marked ♭VI$_{F6}$,) which will be explained in our next chapter. The minor thirteenth, B♭, falls to A; its apparently also rising to C♯ is simply due to our extract being taken from the pianoforte score, in which the part-writing can often not be shown clearly. In the last two bars of this passage is seen the usual resolution on the tonic chord.

557. The tonic and supertonic thirteenths, whether major or minor, are much less frequently found with the generator present than the dominant thirteenths; in the very large majority of instances it will be the derivatives of these chords that are employed. Our next illustration shows II♭13, as well as the dominant thirteenth, both major and minor.

Ex. 487. Wagner. Tristan und Isolde.



Notice in the second bar of this passage an example of the false notation spoken of in § 554. In the third bar we mark the B♮ and D as changing notes, because if we had here a derivative of a dominant ninth it could not resolve upon ii♭. This extract also illustrates what was said in § 357 as to the possibility, with these higher discords, of more than one explanation. The F♯ in bar 2 and the G in bar 5 might be regarded as auxiliary notes. On the other hand, the D♭ in bar 4 can scarcely be considered as a passing note; if it were, as it is rising, its notation would be C♯.

558. We have now to speak of the numerous derivatives of the chromatic thirteenths. As the identification and analysis of these may be found somewhat difficult, we shall, before enumerating the chief of them, give a few rules which will help the student in deciding whether they are derived from dominant, tonic, or supertonic chords.

I. The distinctive note of a supertonic discord is the augmented fourth of the scale. Whenever this note is present, there can be no doubt as to the nature of the chord; for both dominant and tonic discords contain the subdominant of the scale.*

II. The distinctive note of a tonic discord is the minor seventh of the scale,—sometimes also the minor ninth. Either of these notes is sufficient to prove the origin of the chord. The only exception is the rare supertonic minor thirteenth (See Ex. 487 above), where the presence of the augmented fourth *together with* the minor seventh shows the chord to be supertonic.

III. If a discord contain neither the augmented fourth, the minor seventh, nor the minor ninth of the key, it will be derived from the dominant.

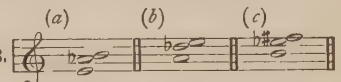
559. Before applying the above rules, it will obviously be needful to ascertain the key with certainty, by noticing how the

* In a few of the higher derivatives of a supertonic discord the third is absent (See § 552); but these are so excessively rare that for practical purposes they may be disregarded.

discord is resolved; if there be any false notation, this must be first rectified. The practical application of the rules will be seen in the analysis of the various derivatives now to be shown.

560. I. *Third, ninth, and thirteenth.* This chord, which is tolerably common as a derivative of a *dominant* discord, is mostly found with a *minor* ninth and a *major* thirteenth, and in its last inversion—

Ex. 488.



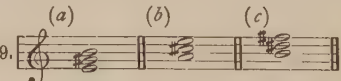
C: V13g* I13g* II13g*

It will be seen that here the notes of the chords cannot be arranged in thirds. It would be possible to indicate the exact combination by figures thus— $\overset{\text{V}13}{\underset{3}{\flat 9}}$ but this would complicate the analysis needlessly; in all such cases we shall indicate the inversion by the letter following the 13, and put (as we have done above,) an asterisk after it to show that we have an *irregular* selection from the notes of the chord.

561. Before proceeding further, it must be pointed out that this form of the chord, which is almost invariably used in a major key, is only partially chromatic. At (*a*) the note E belongs to C major, while A♭ is borrowed from C minor; similarly, at (*b*) and (*c*) the ninths and thirteenths are borrowed from the minor and major keys of F and G respectively. We shall see later other derivatives of the thirteenth, in which the ninth is major and the thirteenth minor.

562. The derivative we are now discussing is very seldom seen with the notation given above. The minor ninth of the chord is, in this combination, almost invariably written as an augmented octave of the generator, although it does not (as in other cases of false notation,) resolve by rising a chromatic semitone (§ 519). The chords now look like major triads on the mediant, submediant, and leading note respectively. Such chords we call False Triads.

Ex. 489.



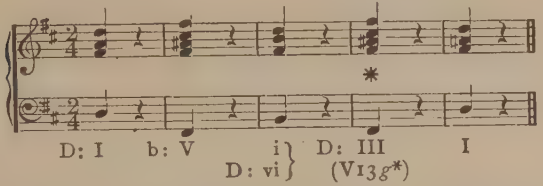
III VI VII
(V13g*) (I13g*) (II13g*)

By applying the Law of the Sharpest Note, it will be seen that these chords *as noted* are the dominants of A, D, and E, none of which is a "borrowing key" for C.

563. We now give a few examples of this chord.

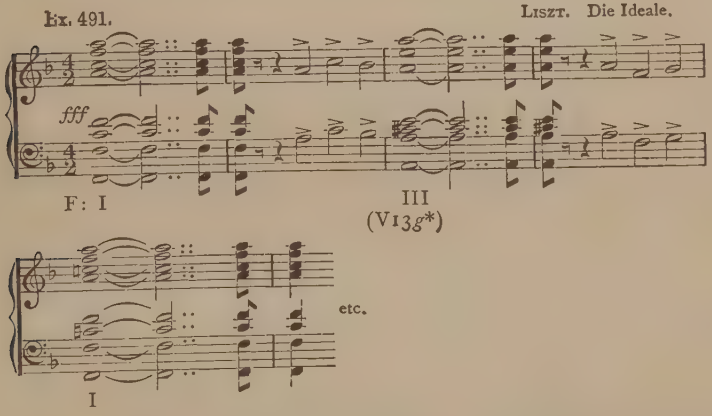
Auber. Le Dieu et la Bayadère.

Ex. 490.



There is clearly a modulation to B minor at the second chord; but the resolution of the fourth chord on the chord of D major, which is the final chord of the piece, decisively proves that we have here a false triad. Our next illustration—the final cadence of one of Liszt's symphonic poems—is perhaps even clearer, for here there has been no previous modulation to the relative minor.

Ex. 491. Liszt. Die Ideale.

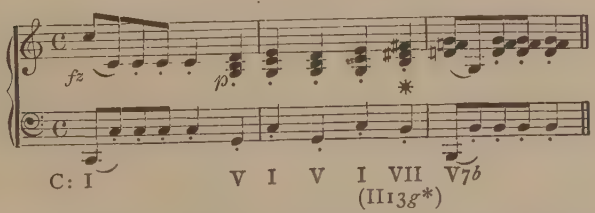


Five more bars, containing only the chord of F, conclude the work.

564. We now give examples of the derivatives of II13 and I13.

Schubert. Sonata in A minor, Op. 42.

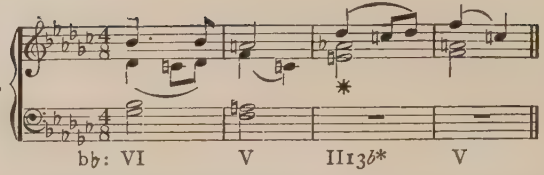
Ex. 492.



Here the resolution of VII on V7♭ proves it to be a false triad.

Dvořák. Spectre's Bride.

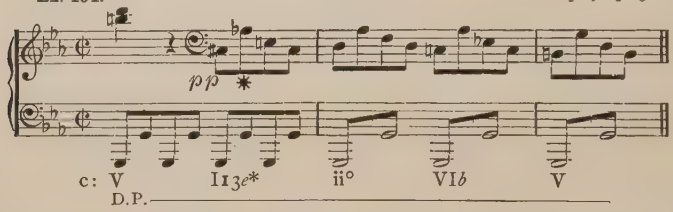
Ex. 493.



This is a somewhat different example. Here the ninth and thirteenth are both minor, and the chord is in the first, not in the last inversion.

565. Our last example of this chord shows it as a derivative of the tonic thirteenth.

Ex. 494. Beethoven. Sonate Pathétique, Op 13.

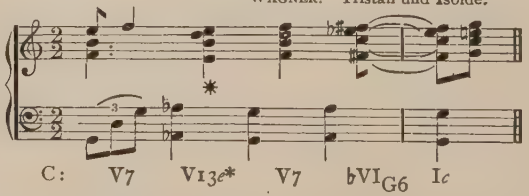


This passage is over a dominant pedal. The chord * is the fourth inversion of a derivative of the tonic thirteenth, both ninth and thirteenth being, as in our last example, minor.

566. II. *Third, fifth, ninth, and thirteenth.* Less common than the form last shown, which it resembles in generally containing the minor ninth with the major thirteenth. The following is a good example of its employment:—

Wagner. Tristan und Isolde.

Ex. 495.

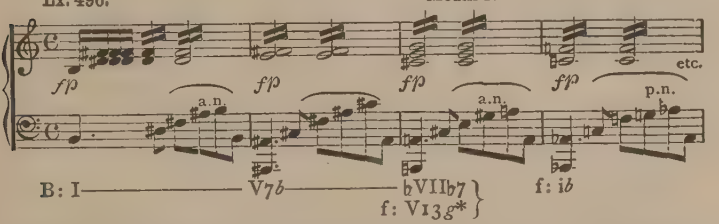


Here is seen at the third crotchet an instance of the thirteenth resolving upwards on the seventh (§ 425). In this passage the chord appears in its correct notation; but it is more usual to write the minor ninth (as in the form of the chord last shown,) as an augmented octave of the generator. It then looks like a fundamental seventh on the mediant, and becomes a False Tetrad* (Compare § 562).

* *Tetrad*—a chord of four notes built up by thirds.

567. An instructive example of the chord with this notation is seen in Mozart's great Fantasia in C minor :—

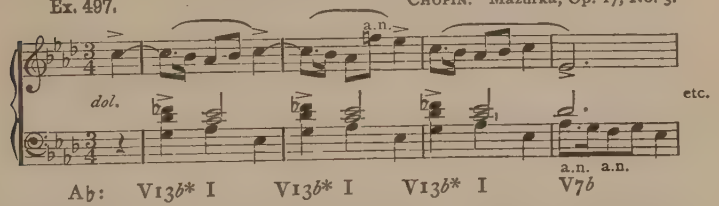
Ex. 496. Mozart. Fantasia in C minor.



This passage begins in B major. The chord in the third bar is taken in that key as ♭VII♭7—a derivative of the tonic thirteenth which will be explained later in this chapter (§ 575); its resolution on the chord of F minor in the next bar proves that it is quitted in that key. C♯ must therefore be enharmonically changed to D♭; and we then see that we have the same form of the chord as that just quoted from Wagner, but with the thirteenth, instead of the ninth, in the bass.

568. III. *Third, seventh, ninth, and thirteenth.* A modification of one of the commonest forms of the thirteenth (Ex. 480 (*b*), by the substitution of the ninth (generally *minor*) for the generator. One example will suffice.

Ex. 497. Chopin. Mazurka, Op. 17, No. 3.

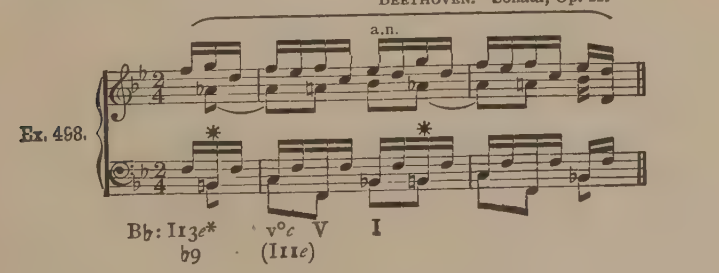


Here, as in so many similar cases, it is possible to regard the thirteenths as auxiliary notes or suspensions.

569. IV. *Fifth, seventh, ninth, and thirteenth.* The rare example of this form here shown—

Beethoven. Sonata, Op. 22.

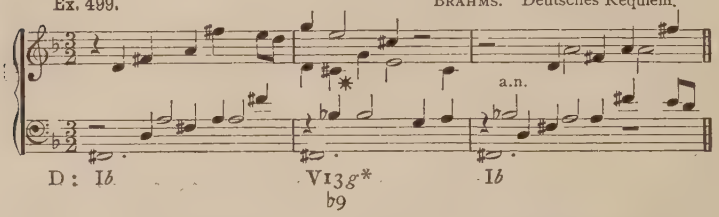
Ex. 498.



requires no explanation beyond that given in the analysis; this is only given for the first half of the passage, of which the second is an exact repetition.

570. V. *Third, fifth, seventh, ninth, and thirteenth.*

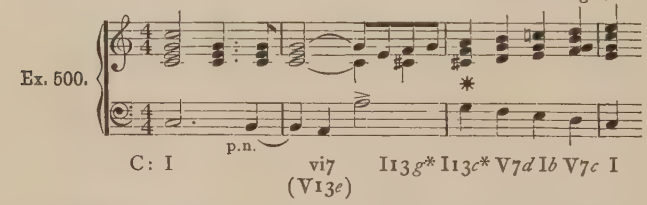
Ex. 499. BRAHMS. Deutsches Requiem.



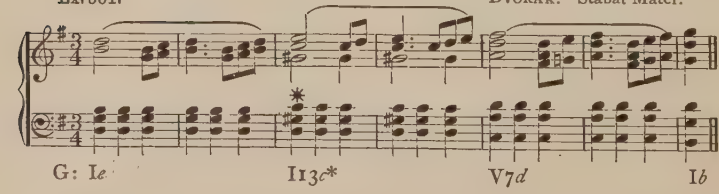
The key of this passage is D major. The first bar gives the first inversion of the tonic triad. The second bar *sounds like* the root position of the dominant minor ninth of B minor, but its resolution in the third bar on the chord of D shows that the B♭ of the tenor is the minor ninth from A, and that the chord is the last inversion of a derivative of a dominant major thirteenth. The chord in the third bar is I*b*, with a chromatic auxiliary note.

571. VI. *Fifth, ninth, eleventh, and thirteenth.* A rare form of the chord, of a very striking effect. We give two examples.

Ex. 500. WAGNER. Die Meistersinger.



Ex. 501. DVOŘÁK. Stabat Mater.

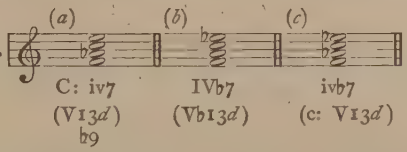


In the first of these examples we see at the last crotchet of the second bar a very unusual form of the chord of the thirteenth, containing only the minor ninth, eleventh, and major thirteenth, in the last inversion. The chord * in bar 3 is the second inversion of the same chord, with the addition of the fifth. It is curious to notice that, while the effect of the two examples here

given is entirely different, the chord of the thirteenth is, both in position and resolution, identical in both.

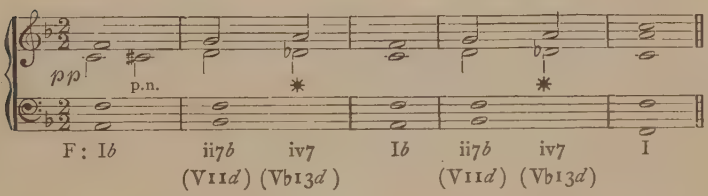
572. VII. *Seventh, ninth, eleventh, and thirteenth.* We have already seen this form in § 440, as the only important *diatonic* derivative of the thirteenth; but if either the ninth or the thirteenth be chromatic we have the chord now under notice, which is most often met with as a derivative of the dominant chord. In this shape it becomes a seventh on the subdominant.

Ex. 502.



The form (*a*), which, like most of those we have been showing, contains a minor ninth and major thirteenth, is but rarely met with. We give a good example of its employment.

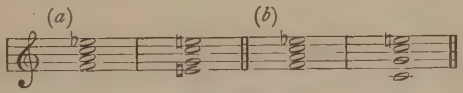
Ex. 503. STAINER. The Daughter of Jairus.



Here the chord is seen twice; the first time the thirteenth falls a third to the root of the tonic chord; the second time it rises a third to the fifth of the chord.

573. The form (*b*) of the chord (Ex. 502), which, like (*a*) is only partially chromatic, (only one note being borrowed from the minor key,) is more common. The notes of the chord are those of the dominant seventh of B flat, but if resolved on the tonic chord of C,

Ex. 504.

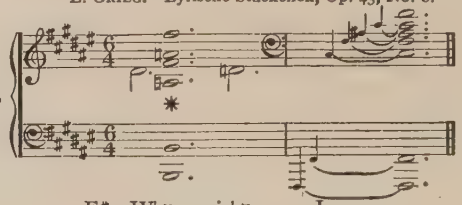


it cannot possibly be a chord in B flat. Here is an illustration of the practical value of the rules given in § 558. The chord, which its resolution proves to be in the key of C, contains neither the augmented fourth, the minor seventh, nor the minor ninth of that key; it is therefore derived from the dominant. It should be mentioned in passing that, when resolved on the tonic chord, the E♭ is often written with false notation as D♯.

574. The following passage—

E. GRIEG. Lyrische Stückchen, Op. 43, No. 6.

Ex. 505.

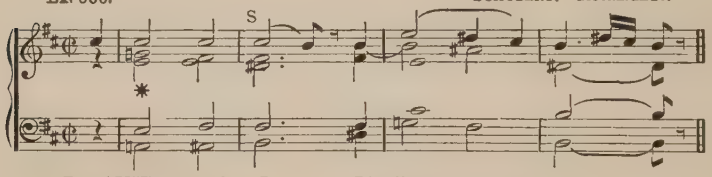


F♯: IV♭7 iv♭7 I
(V13*d*) (f♯: V13*d*)
♭9

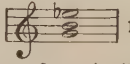
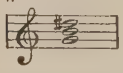
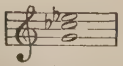
shows both the forms (*b*) and (*c*) of Ex. 502; the latter has evidently the character of a passing chord.

575. The same derivative of a tonic discord can also be used; the root will now evidently be ♭VII, and the chord ♭VII♭7. We have already seen it in the third bar of Ex. 496, where, however, it was enharmonically changed before resolution; we now give an example in which it is resolved in the key to which it belongs—

Ex. 506. SCHUBERT. Rosamunde.



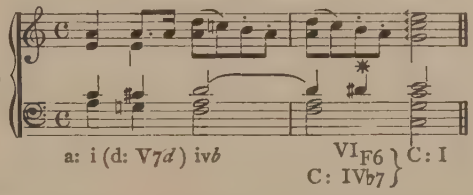
B: ♭VII♭7 V7♭ I I♭ ii°7*c* V13 V7 I
(I♭13*d*) (b: ii°7*c*)

576. As all fundamental discords can be derived from any one of the three generators in the key, it is evident that the chords of the thirteenth can be used for the purposes of modulation; for they can be taken as derived from the dominant, and quitted as derived from the tonic or supertonic, and *vice versa*. But their use may be still further extended by enharmonic modulation, as with the chords of the ninth. For example, the dominant minor thirteenth in the key of C, with only generator, third, and thirteenth present  may, by changing E ♭ to D ♯, become the last inversion of a similar chord derived from B  ; or if instead of this change we substitute C ♭ for B ♮  the chord will become a first inversion of a minor thirteenth on E ♭. In these cases the chord can be quitted in

any of the keys in which the new generator is either tonic, supertonic or dominant.*

577. We have already met with one instance of an enharmonic modulation by means of this chord, Ex. 496; we now add a few others which will repay careful study.

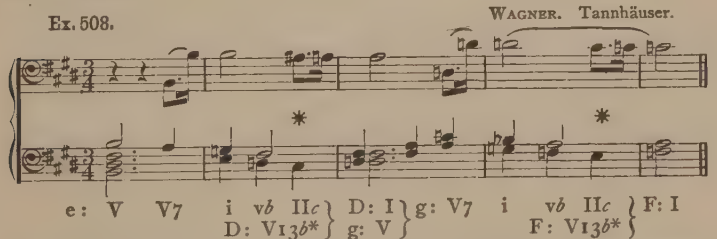
Ex. 507. Mendelssohn. Fantasia, Op. 16, No. 1.



This passage begins in A minor: the chord * is the augmented sixth (see next chapter) in that key; but it is resolved in the key of C; the last chord but one must therefore be in the key of C, since in making a modulation there will always be a connecting link. The D♯ of the chord * is quitted as an E♭, and the chord itself thus becomes the form of the thirteenth shown in § 568, the seventh in the bass leaping to the generator of the tonic chord, as in Ex. 505. It will be observed that here the general rule as to writing the chord in which an enharmonic change is made in the notation of the new key is not observed.

578. The two passages from Wagner next to be quoted are more curious—

Ex. 508. Wagner. Tannhäuser.



Here, beginning in E minor, the third crotchet of the second bar is taken as II*c* in that key; by the enharmonic change of A♯ to B♭, the chord becomes the derivative of V13 in D major seen in § 560, and here written as a "false triad" (§ 562). The modulation to F major, two bars later, is effected in the same way.

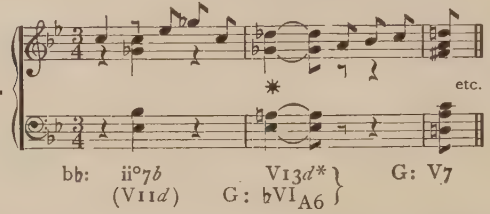
579. In the passage just analyzed the enharmonic change made the chord into a chord of the thirteenth; in that now to

* Exercise VII at the end of this chapter has been composed specially to illustrate enharmonic modulation by means of this form of the chord.

be given the process is reversed, a chord of the thirteenth being changed into something different.

WAGNER. Die Meistersinger.

Ex. 509.

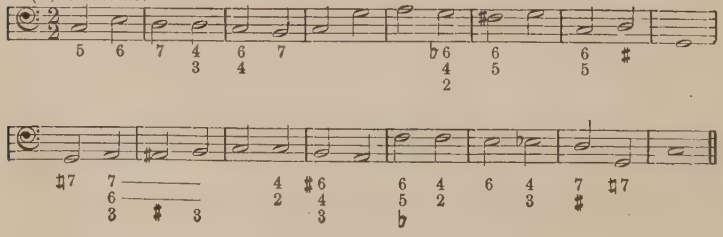


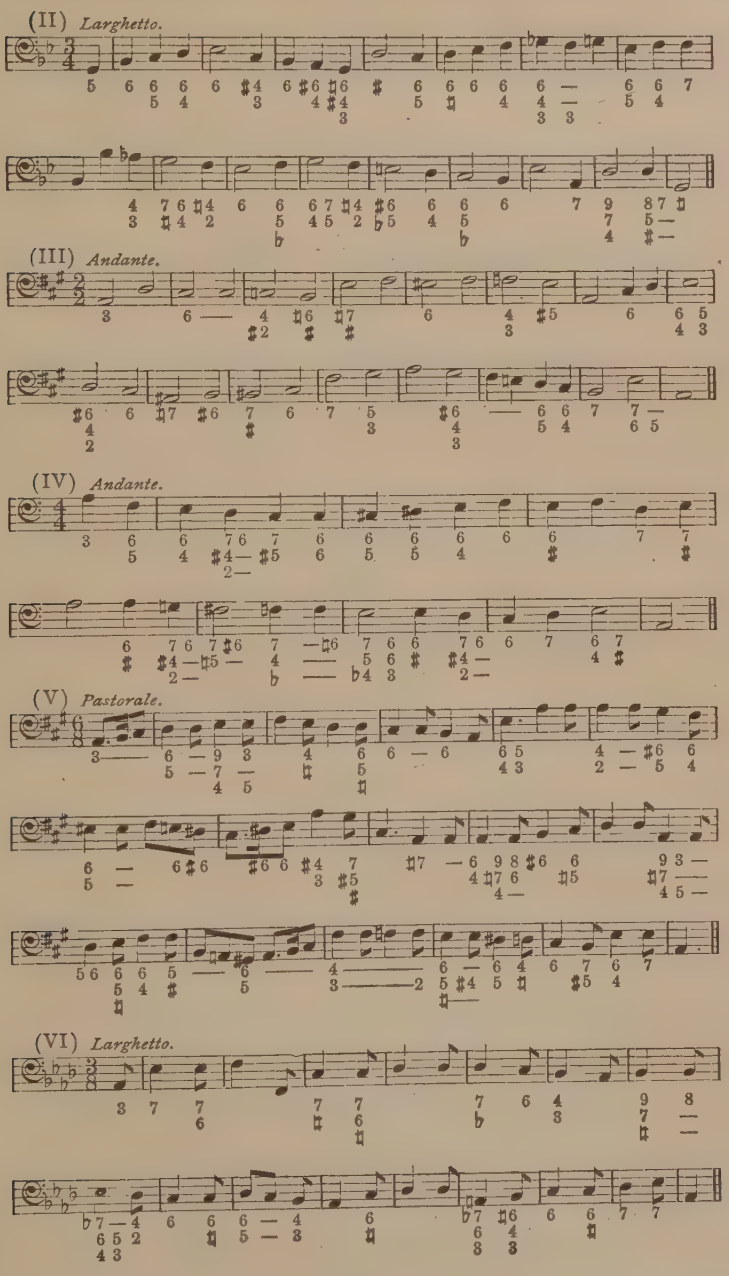
At the first bar of this passage the chord is the derivative of the third inversion of the dominant eleventh (the "chord of the added sixth") in B♭. At ✱ the fifth rises to the minor thirteenth of the same chord. As it resolves in the next bar on the dominant seventh of G, it is clear that there must be here a double enharmonic change; G♭ and D♭ being changed into F♯ and C♯, and the chord being quitted as an unusual form of the augmented sixth (§ 610).

580. Owing to the almost inexhaustible varieties of the chromatic chords of the thirteenth, the student will probably find the present chapter the most difficult in the volume. We strongly urge him, if he would master the subject thoroughly, to analyze very carefully all the exercises now to be given; in this he will find the three rules given in § 558 extremely serviceable. When he has done this, *but not before*, it will be of great advantage to him to compare his own analysis with that given in the Key to the Exercises, in which every chord is fully analyzed. After working the exercises here given, it will be profitable for him to try to compose short pieces of eight or sixteen bars in length, introducing the various forms shown in this chapter as naturally as he can. He must be careful to resolve each properly, and, above all, never to leave his tonality doubtful.

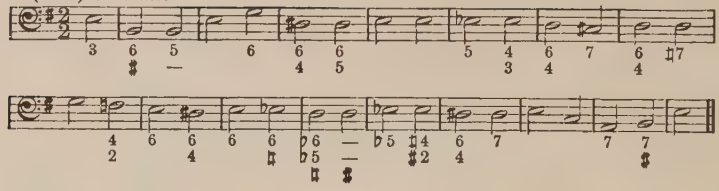
EXERCISES.

(I) *Moderato.*

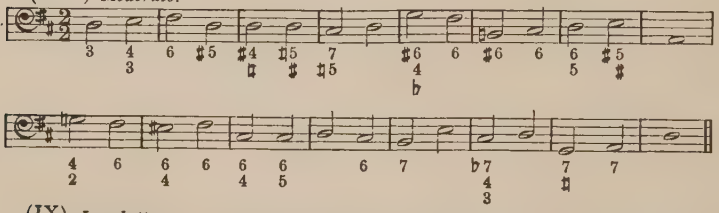



(II) Larghetto.
(III) Andante.
(IV) Andante.
(V) Pastorale.
(VI) Larghetto.

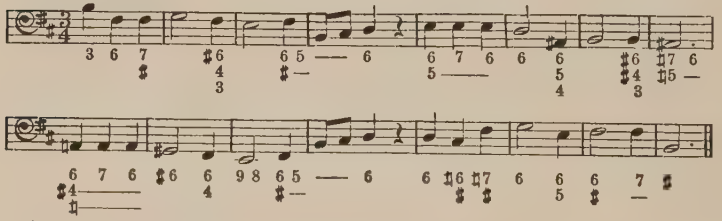
(VII) *Andante.*



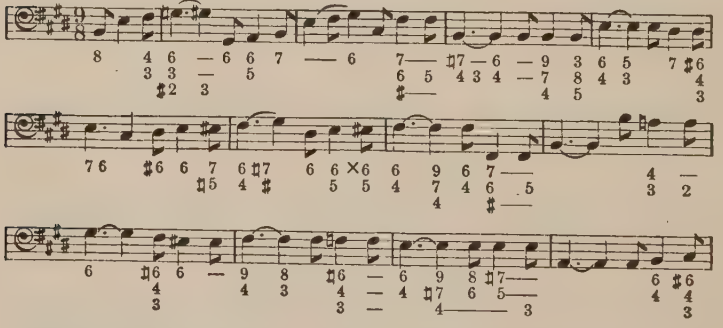
(VIII) *Moderato.*



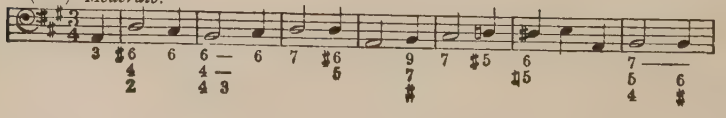
(IX) *Larghetto.*

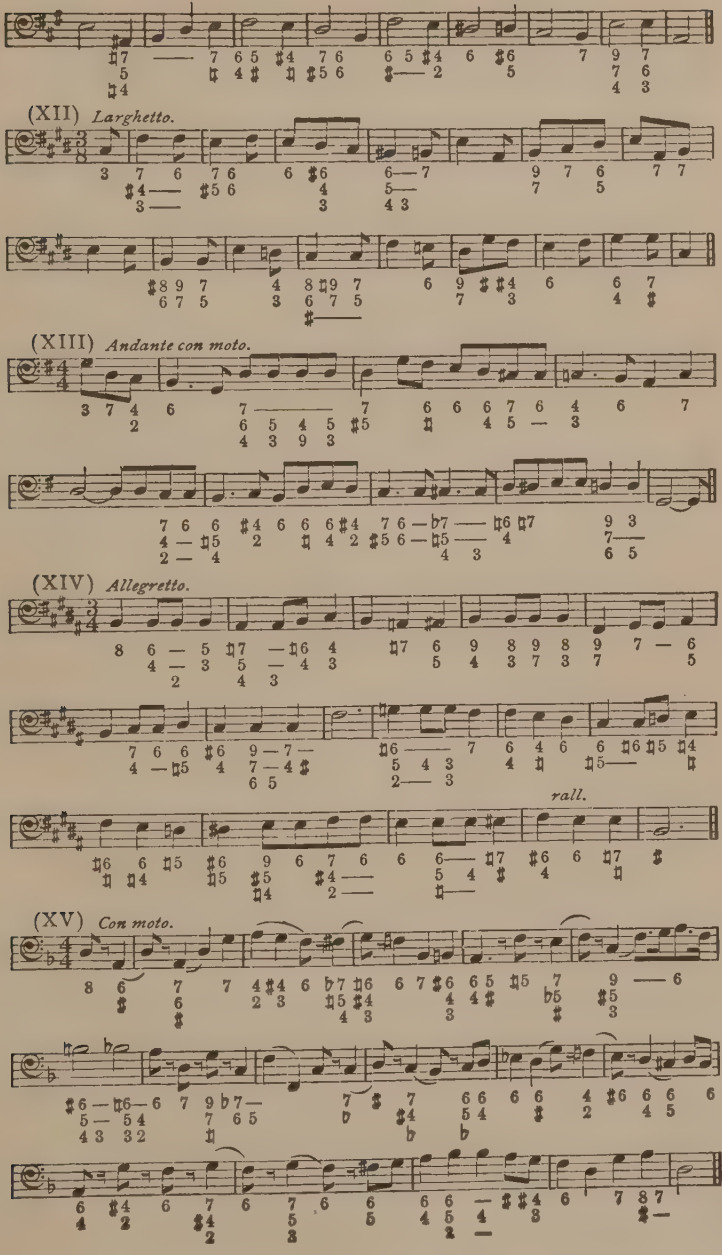


(X) *Andante con moto.*

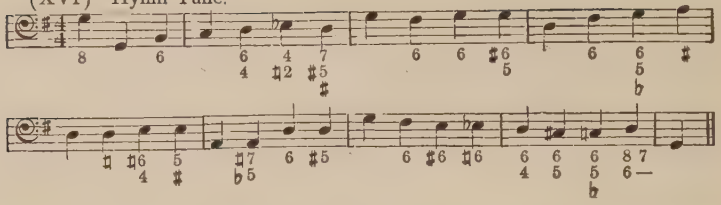


(XI) *Moderato.*

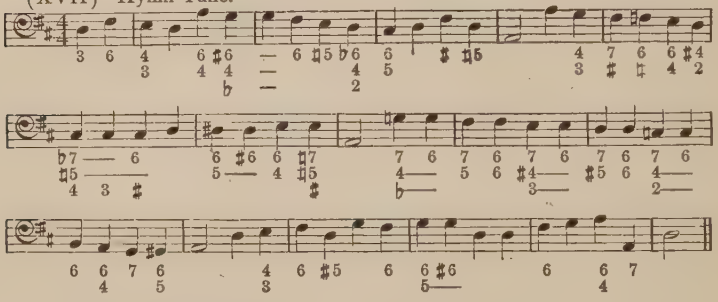



(XII) Larghetto.
(XIII) Andante con moto.
(XIV) Allegretto.
rall.
(XV) Con moto.

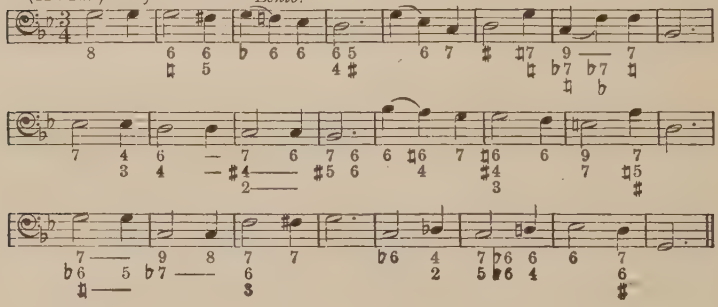
(XVI) Hymn Tune.



(XVII) Hymn Tune.



(XVIII) Hymn Tune. *Lento.*



CHAPTER XIX.

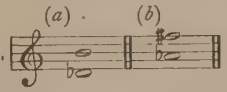
THE CHORD OF THE AUGMENTED SIXTH.

581. In addition to the series of fundamental chords already explained, there is one chord of great importance and of frequent use still to be noticed, which is formed in a different manner from any of the chords yet shown, and which contains an interval which we have not yet met with. This is the Chord of the Augmented Sixth.

582. We saw in our last chapter certain forms of the chord of the thirteenth in which some of the notes belonged to the major and others to the minor scale of the same tonic; in other words, the notes of the chord were taken from different modes. Such were those chromatic thirteenths in which the ninth was minor and the thirteenth was major (§§ 560–571), or in which the major ninth was combined with the minor thirteenth (§§ 573–575.) In both these cases all the notes of the chord belong to the scales (major or minor,) of the *same* tonic; but the chords now to be explained are derived from *two* tonics, for no diatonic scale, whether major or minor, contains the interval of the augmented sixth.

583. If we take the chromatic scale of C, given in Ex. 374, and put an augmented sixth above every note of the scale, we shall find that only two of the notes thus obtained will be in the key. The only possible augmented sixths in the key of C are above the minor second and the minor sixth of the scale.

Ex. 510.

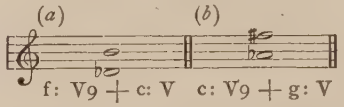


It is important to notice that the lower notes of these intervals are the two flattest notes in the key of C (§ 520), and that the upper notes are the two sharpest. It must further be observed that the interval, whether in a major or a minor key, must always be chromatic; at (*a*) D♭ is a chromatic note in both C major and C minor; while at (*b*) F♯ is chromatic in both keys, A♭ also being chromatic in C major.

584. We already know that every discord in a key is derived from the dominant, either of that key, or of one of its "borrowing keys,"—the fifth above or the fifth below. The difference between the augmented sixth and all other intervals is, that it is derived from two keys—and therefore from two dominants—at once, and the chord containing the interval has a

"double root," or (more accurately,) a "double generator." At (*a*) D♭, the minor sixth of F minor, is combined with the leading-note of C; and at (*b*) the minor sixth of C minor is combined with leading-note of G. The minor sixth of a key is the minor ninth of its dominant chord; and the roots of the intervals shown in Ex. 510 may be marked thus:—

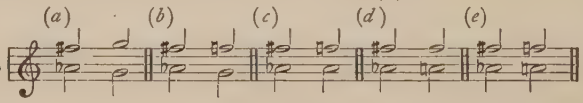
Ex. 511.



We shall see presently that we use a simpler formula in our analysis; this one is given to make clear the nature and origin of the interval, which is always formed by combining the *flattest* note of one minor key with the *sharpest* note (the leading-note,) of the key a perfect fifth above.

585. The general tendency of the notes of an augmented interval being to diverge (§ 234), the most frequent resolutions of the augmented sixth are those in which the two notes move apart, each a semitone in contrary motion, as at (*a*) below. More rarely each descends a semitone, as at (*b*); or one remains stationary while the other moves a semitone toward it, as at (*c*) (*d*). It is even possible, though rare, for both to approach each other by step of a semitone, as at (*e*).

Ex. 512.

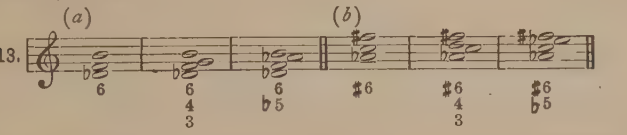


586. The chord of the augmented sixth differs from all chords hitherto met with, not only, as we have just seen, in being derived from two roots, but in the fact that it is not made by placing thirds one above another. We have at present only seen the interval itself; to complete the chord, one or more notes must be added within the interval. There are three forms of the chord in general use; we have first to show how they are made.

587. Look once more at the intervals seen in Ex. 511. That at (*a*) consists of the minor ninth of C and the major third of G; while (*b*) contains the minor ninth of G and the major third of D. In the former case we have notes of the tonic and dominant fundamental chords, and in the latter of the dominant and supertonic. The usual forms of the chord of the augmented sixth are made by adding either one or two notes belonging to the *upper* of the two roots. These notes will be the seventh, octave, and minor ninth of the upper root, which the student will see are the major third, augmented fourth, and perfect fifth of the lower note of the interval. The

third will always be present, and to it either the fourth or fifth may be added. We show the three forms of the chord, marking the figurings.

Ex. 513.



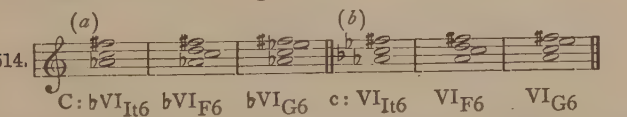
If the key were C minor, it would of course be necessary to mark the three chords at (*a*) with ♮6.

588. The positions here shown are the *root-positions* of the chord. Owing to its peculiar construction, the figurings of these root-positions resemble the figurings of inversions of triads, or chords of the seventh; but this will cause no confusion in practice, as the chord can be instantly identified by the interval of the augmented sixth, *which occurs in no other.*

589. These three forms of the chord are usually known by distinctive names. That containing only the third is called the *Italian Sixth,* that containing the third and fourth is called the *French Sixth,* and that with the third and fifth the *German Sixth.**

590. In marking the chords of the augmented sixth in our analysis, we indicate the roots by ♭II and ♭VI in a major key, and by ♭II and VI in a minor key; in the latter key the root of the chords seen at Ex. 513 (*b*) is not chromatic. As all the usual forms of the chord have *major* thirds above the root, we use capitals for the numerals; we show the exact nature of the chord by adding It6, F6, or G6 below the root, just as we show the dominant discords: *e. g.* :—

Ex. 514.



C: ♭VI$_{It6}$ ♭VI$_{F6}$ ♭VI$_{G6}$ c: VI$_{It6}$ VI$_{F6}$ VI$_{G6}$

In the rare cases, to be mentioned later, in which irregular forms of the chord are met with, these are indicated by "A6," (that is simply "Augmented Sixth") thus ♭VI$_{A6}$. Instances of these analyses will be seen in Exs. 472, 478, 486, 495, and 509.

591. As these chords are not made, like all others, by placing thirds one above another, it is clear that the letters, in-

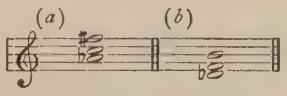
* As students are apt to confound these names, the following artificial "aid to memory" (for which the author is indebted to his friend Dr. A. J. Greenish,) may be of service. The order Italian, French, German—the natural order of the chords, containing third alone, third and fourth, third and fifth, gives the initial letters I, F, G, of the three syllables "I ForGet."

dicating the inversions will bear a new meaning. As the first note above the root is, in the regular forms, always a major third above the root, ♭VI*b* or ♭II*b* will indicate that the third is in the bass; but ♭VI*c* will show that the next note above the third is in the bass. In the Italian sixth this will be the sixth itself, in the French sixth the fourth, and in the German sixth the fifth of the chord. The examples shortly to be given will make this quite clear.

592. We have seen in § 584 that the augmented sixth on ♭II is composed of fundamental harmony of the tonic and dominant, and that on ♭VI of dominant and supertonic harmony. We already know that tonic discords are rarer than supertonic; it is therefore not surprising that the chords of the augmented sixth on ♭II are much less often met with than those on ♭VI. We now proceed to speak of the three usual forms of the chord.

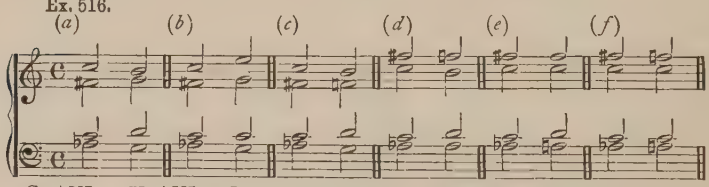
593. I. The Italian Sixth. This is the simplest form, as it contains only three notes.

Ex. 515.

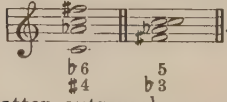


Evidently one note must be doubled in four-part harmony. As with other discords, neither of the dissonant notes of the augmented sixth can be doubled; the third from the bass note therefore appears in two parts. The chord is figured like an ordinary first inversion of a triad; but the sixth being a chromatic note in the dominant chord, will require to be indicated accordingly—♯6 or ♮6. We now give this chord with its principal resolutions, putting the commonest progressions first.

Ex. 516.



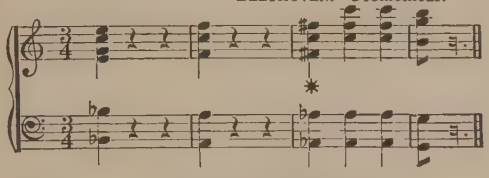
C: ♭VI$_{It6}$ V ♭VI$_{It6}$ I*c* ♭VI$_{It6}$ V7 ♭VI$_{It6}$ vii°b7*d* ♭VI$_{It6}$ II7*e* ♭VI$_{It6}$ IV*b*

594. This form of the chord is susceptible of two inversions  . Of these the first is infrequent, and the latter extremely rare. This is because the interval of the diminished third (the inversion of the augmented sixth,) can hardly ever be used with good effect except in the last inversion of the *German* sixth, in which form it is tolerably common.

595. Here follow a few examples of the use of this chord. The analyses are so simple that, to save space, we omit them.

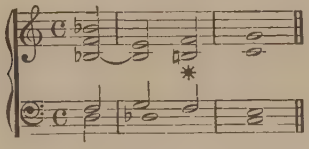
Beethoven. Prometheus.

Ex. 517.



Spohr. Fall of Babylon.

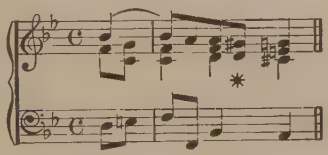
Ex. 518.



Here is seen the commonest resolution—♭VI to V.

Handel. Hercules.

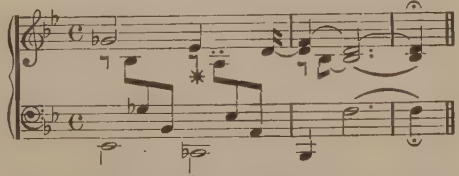
Ex. 519.



This resolution, on V7 (Compare Ex. 516 (*c*)) is rather rare.

Schumann. Humoreske, Op. 20.

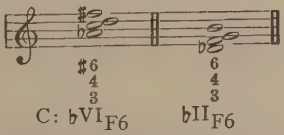
Ex. 520.



Here we see the chord on ♭II resolved on I, the most usual progression for this chord, and (as will be noticed,) the same as ♭VI–V, but on another part of the scale. The passage *looks like* a half cadence in E flat minor; that it is really a cadence in B flat major is proved by these being the final chords of the movement.

596. II. The French Sixth:—

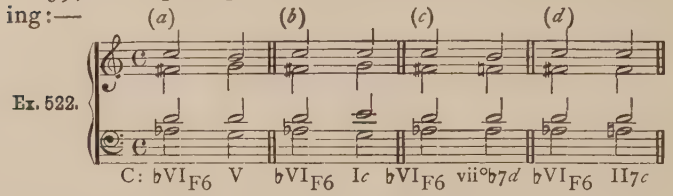
Ex. 521.



This chord is figured like the second inversion of a chord of the

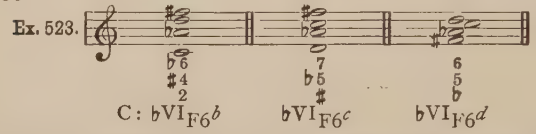
seventh; but the chromatic note must of course be indicated when not in the bass.

597. The principal resolutions of this chord are the following:—



With the aid of the analyses here given, the student will understand the progressions without difficulty.

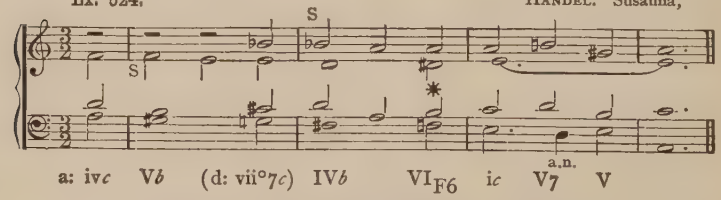
598. There are three inversions of this chord:—



The last inversion is so harsh in effect that, though possible, it is seldom used (See § 594). It is needless to show all the resolutions of these inversions, as the progression of the dissonant notes is governed by the rules with which the student may be reasonably presumed to be by this time quite familiar.

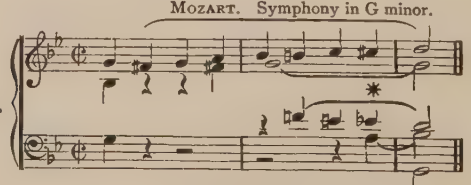
599. The following examples of this form of the chord will sufficiently illustrate its use:—

Ex. 524. HANDEL. Susanna,



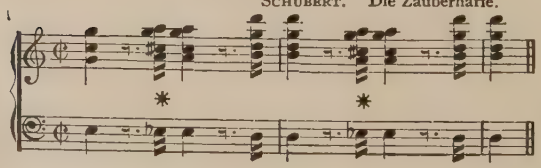
MOZART. Symphony in G minor.

Ex. 525.



SCHUBERT. Die Zauberharfe.

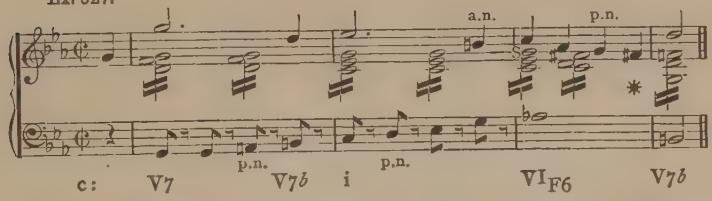
Ex. 526.



In Ex. 524 we regard the F in the alto as a suspension by analogy with the B flat in the treble of the following bar, which can be nothing else. The major chord on the subdominant in the second bar can in a *minor* key only be a "passing chord." The analysis of Exs. 525, 526 is so simple that we leave it to the student. In all these examples the French sixth resolves on the tonic chord; on the root-position in Ex. 524, on the first inversion in Ex. 525,—the G in the bass on the last chord is the entry of a new part, and the progression is VI_{F6}^{c}—$i\flat$—and in Ex. 526, on the second inversion.

600. The examples now to be given illustrate other resolutions.

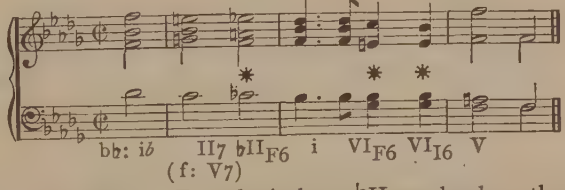
Ex. 527. Mendelssohn. Athalie.



Here the D and F♯ of the French sixth are suspended by E and G, and the chord resolves rather irregularly on the first inversion of the dominant seventh—

Schumann. "Paradise and the Peri."

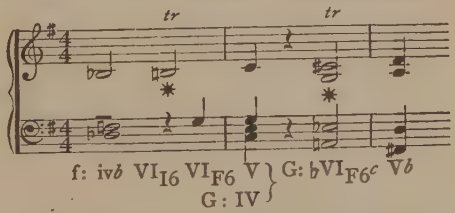
Ex. 528.



Here we see first the French sixth on ♭II resolved on the tonic minor chord. When an augmented sixth on ♭II resolves on the tonic chord, it is almost always a *major* chord, as in Ex. 520. In the following bar we see the French sixth on VI changing to the Italian sixth before resolving. We often see different forms of the augmented sixth taken in succession in this way.

Wagner. Die Meistersinger.

Ex. 529.

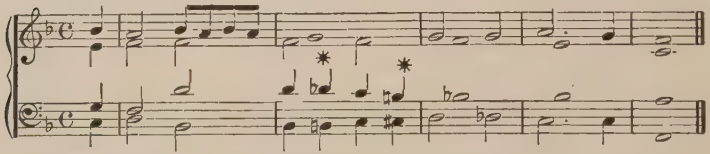


This interesting passage shows in the first bar the Italian sixth

changed to the French by the addition of the fourth; and in the second bar the second inversion of the French sixth irregularly resolved on the first inversion of the dominant (Compare Ex. 527). Notice that G, the seventh of A, rises because A falls to the note on which it would regularly resolve. Here is an illustration of the rare progression mentioned in § 240.

601. The last example to be given of this chord offers some new features.

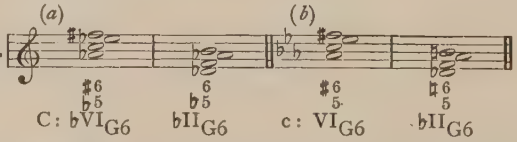
Ex. 530. VERDI. Requiem.



Here are shown two positions of the chord. We find first the rare last inversion, with a diminished third above the bass note. The last chord of this bar is clearly an augmented sixth, for C♯ is not in the key; the D♭ is incorrectly written because of its resolving upwards, like the minor ninths and thirteenths which have been already met with. The passage is further interesting as furnishing an example of the rare progression of the notes of the augmented sixth shown at Ex. 512 (*e*), where they approach each other by step of a semitone. The chord in the passage now under notice resolves on ii7*c*, the derivative of the fourth inversion of a dominant eleventh. Observe also that it would be possible to regard the second, third and fourth crotchets of the second bar as chromatic passing-notes in two parts by contrary motion.

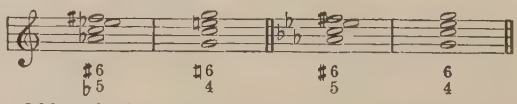
602. III. THE GERMAN SIXTH.

Ex. 531.



We have given the chords in both major and minor key, to remind the student of the difference in the figuring. The resolutions of this chord are the same as those of the other two forms, excepting that when the bass falls a semitone it usually resolves on a second inversion.

Ex. 532.

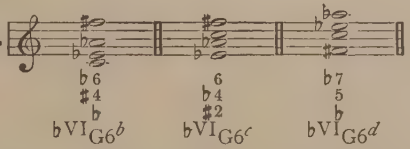


Here the fifth of the chord (the minor ninth of the upper generator) rises a chromatic semitone in the major key, and

remains stationary in the minor. Evidently, if the chord is resolved direct on the dominant, the fifth will fall a semitone, making consecutive fifths with the bass. Such fifths (as will be seen presently), are not always objectionable.

603. Like the French sixth, this form of the chord has three inversions.

Ex. 533.

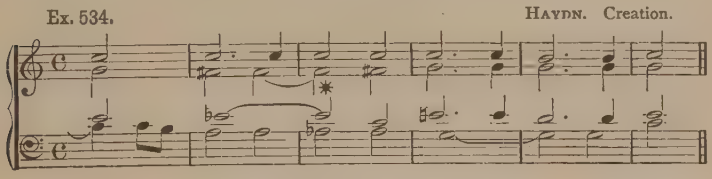


The last inversion, containing the interval of a diminished third from the bass, is much more frequently used than the last inversion of the French sixth, being much less harsh in this form of the chord.

604. The German sixth is more common than either the Italian or French, and it will be needful to give a larger number of illustrations to show its use. The analyses are mostly so simple that we leave them to the student.

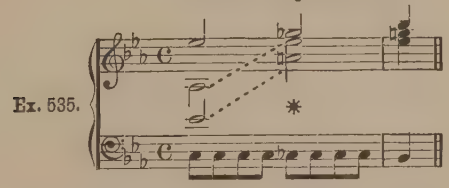
Ex. 534.

Haydn. Creation.



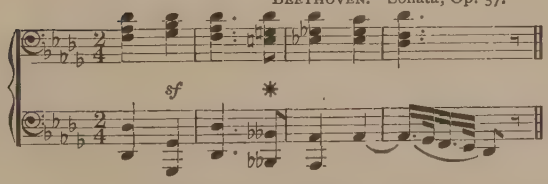
Mozart. Quartett in E♭.

Ex. 535.



Beethoven. Sonata, Op. 57.

Ex. 536.



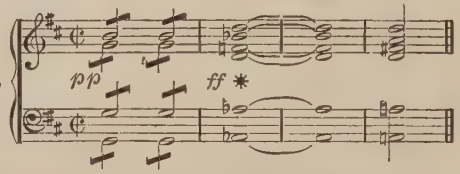
At Ex. 534 is the commonest resolution of the chord—on the second inversion of the tonic, though Haydn has first changed the chord to the Italian sixth. (Compare § 600.) Ex. 535 shows the same resolution, but with a freedom—not to say

licence—in the part writing by no means usual with Mozart, and which we do not recommend for the student's imitation. The dotted lines show the progression of the separate parts in the score. Ex. 536 shows the resolution of the chord on dominant harmony—in this case on a dominant eleventh; the two notes of the augmented sixth move in similar motion (Ex. 512 (*b*); F♭, the minor ninth of the upper generator, is written as E♯, and moves in consecutive fifths (§ 468) with the bass.

605. In the following passage the chord ✱ is written as if it were a dominant seventh in E flat.

BEETHOVEN. Symphony in D.

Ex. 537.

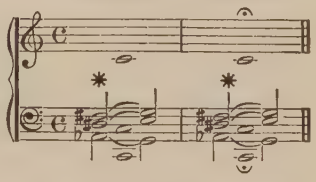


Its resolution shows it to be the last inversion of the German sixth on the minor sixth of the key of D. In this key A♭ is not a note; its true notation is G♯.

606. The commencement of Schubert's fine song "Am Meere" gives an excellent example of the first inversion of this chord, resolved on the root-position of the tonic.

SCHUBERT. "Am Meere."

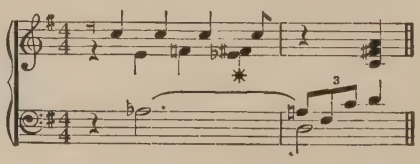
Ex. 538.



607. The passages next to be given show some other resolutions of this chord.

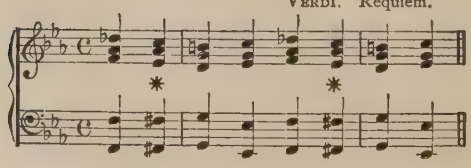
MACKENZIE. Colomba.

Ex. 539.



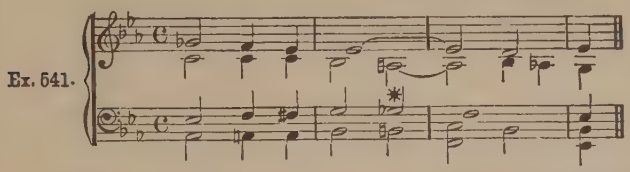
VERDI. Requiem.

Ex. 540.

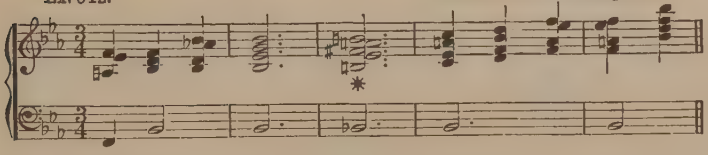


BRAHMS. Schicksalslied.

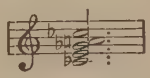
Ex. 541.



Ex. 542. SULLIVAN. The Prodigal Son.



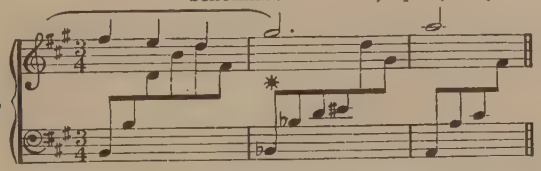
Ex. 539 gives the chord on the minor second of G resolved on the chord of the dominant seventh, the upper note of the augmented sixth remaining to be the third of the following chord. At Ex. 540 is the last inversion of the chord (compare § 605), resolved on the dominant chord; and at Ex. 541 the chord on the minor sixth of the scale (here written as B♯ instead of C♭) is resolved on a supertonic seventh. Ex 542 is somewhat similar, the augmented sixth being resolved on the supertonic chord; but here it is taken above a tonic pedal, and the minor ninths from *both* the generators are written as augmented octaves (§ 519). The real notation of the chord * is of course



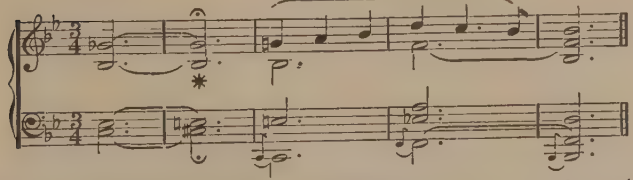
608. Schumann's music is full of interesting examples of this chord. We select a few typical specimens.

SCHUMANN. Novellette, Op. 21, No. 7.

Ex. 543.



Ex. 544. SCHUMANN. Kreisleriana, Op. 16, No. 2.

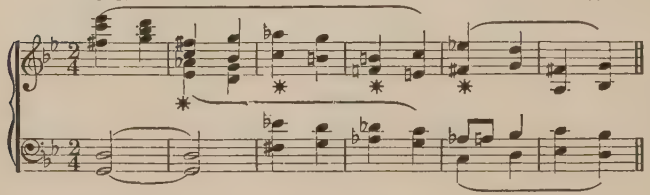


At Ex. 543 the chord * is the augmented sixth on the minor

second in the key of A. The notation is evidently inaccurate, as B♭ and E♯ cannot possibly belong to the same key. The E♯ is really F♮, and the resolution of the chord is unusual, being on the first inversion of the submediant triad. Ex. 544—in which, to make the progression clearer, the distribution of the first chords between the two hands has been altered—is another illustration of false notation. C♯ and G♭ cannot belong to the same key. The whole passage is in B♭, and the C♯ in the second bar is really D♭. The chord ✳ is the second inversion of the augmented sixth on G♭ (with a diminished third), resolved on the root-position of a supertonic seventh.

609. The following passage

Ex. 545. SCHUMANN. "Bunte Blätter," Op. 99.

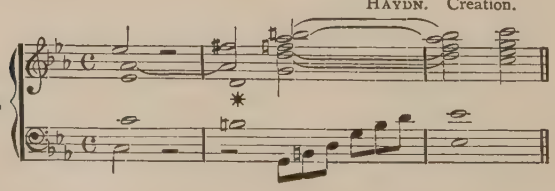


is probably unique, as containing four chords of the augmented sixth in as many consecutive bars. The first two bars are on a "double pedal" (see Chapter XX.). The first chord of the second bar is the second inversion of the German sixth on the minor second of the key resolved on a *minor* tonic chord. (Compare Ex. 528.) The third bar of our present illustration shows the last inversion of the German sixth, resolved on the dominant of C minor, as in Ex. 540; the fourth bar gives the second inversion of the same chord on the minor second of C minor, here resolved on a *major* chord; and the fifth bar contains the first inversion of the chord on the minor second of G minor, the minor ninth of the lower generator rising a chromatic semitone, and the chord being thus resolved on the third inversion of a dominant minor ninth.

610. The three forms of the chord of the augmented sixth already explained are by far the most common, but by no means the only ones to be found. We give a few of the rarer forms.

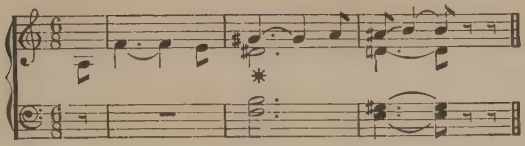
HAYDN. Creation.

Ex. 546.



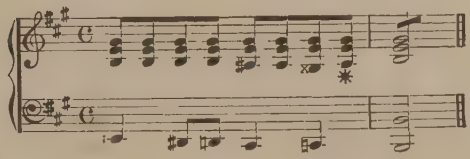
Wagner. Tristan und Isolde.

Ex. 547.



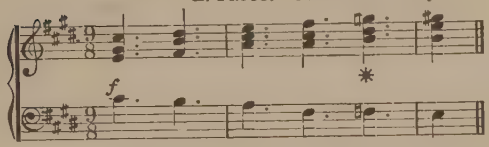
Verdi. Requiem.

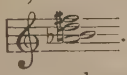
Ex. 548.



E. Prout. Overture "Rokeby."

Ex. 549.

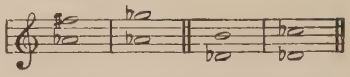


In Ex. 546, B♮, the third of the lower generator is substituted for C, the seventh of the upper. The chord is the first inversion of  . Another position of the same chord is seen in Ex. 547, though here it is simpler to regard the chord as a French sixth, and to consider the G♯ an auxiliary note. At Ex. 548 a beautiful effect is obtained by the substitution of the major for the minor ninth of the upper generator. Ex. 549 shows the chord on the minor second of the key, with the minor ninth of the lower generator, and the octave, third, and minor thirteenth (instead of the seventh) of the upper. It may be said in general terms that any combination of the harmonies of the two generators is possible for this chord, so long as the minor ninth of the lower and the third of the upper generator are present, and that no false relation is induced between the notes employed.

611. Like other fundamental chords, the chord of the augmented sixth can be freely used for the purposes of modulation. As it can be taken in either a major or minor key on either the minor sixth or minor second of the scale, it can evidently be taken in any one of four keys and quitted in any other of the same four without an enharmonic change. But it is also largely available for enharmonic modulation. When thus employed, the upper note of the augmented sixth, being enharmonically changed, becomes a minor seventh, of which the lower note of

the interval is the generator.

Ex. 550.



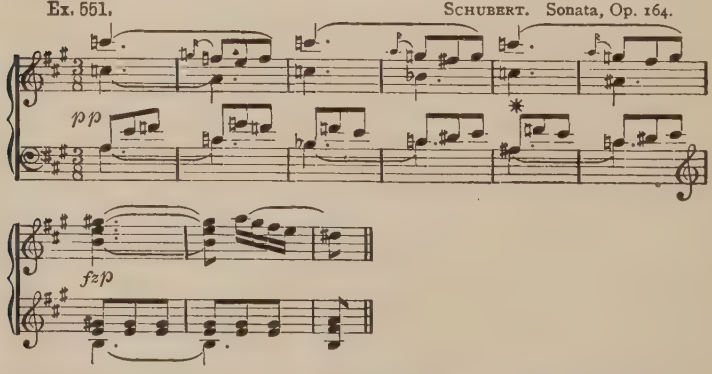
This change evidently converts the chord into a fundamental seventh.

612. A little thought will show the student that it is only the *German* sixth that can be thus converted; for the French sixth contains a note which will not be a part of a chord of the seventh at all; while the Italian sixth will be impossible as a seventh in four-part harmony, owing to the doubling of the third.

613. This enharmonic change of an augmented sixth to a dominant seventh, and *vice versa*, is mostly used when a modulation is desired to a key a semitone up or down. If, for instance, in C the chord of the augmented sixth on A♭ is taken, and the F♯ changed to G♭, the chord becomes the dominant seventh in D♭, and can be resolved in that key. It might also be quitted as the supertonic seventh of G♭, or the tonic seventh of A♭, but these resolutions, the latter especially, are seldom, if ever, to be met with. Conversely, if we take the dominant seventh in the key of C, and change the F to E♯, the chord becomes an augmented sixth in B major or minor—possibly, even, in F♯ major or minor. We shall see directly that some other enharmonic changes are possible; but the above are by far the most usual.

614. We shall conclude this chapter with a few examples of enharmonic modulation by means of this chord. Our first extract

Ex. 551. SCHUBERT. Sonata, Op. 164.

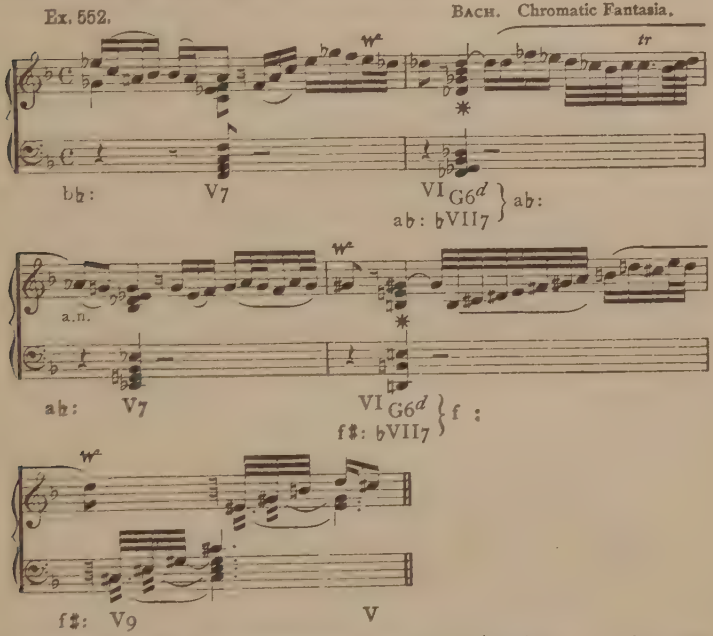


illustrates what has been said in the last paragraph. At the third and fourth bars is the chord of the dominant seventh in F major. In the fifth bar B♭ is changed to A♯ and the chord becomes the last inversion of the German sixth in E major, in

which key it is resolved at the seventh bar.

615. Our next illustration will be found more difficult to follow; we therefore give the analysis in full.

Ex. 552. Bach. Chromatic Fantasia.



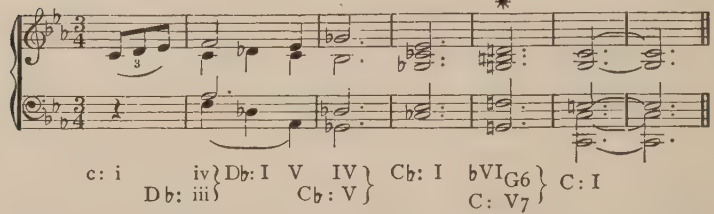
The first bar of this passage is clearly in B♭ minor; as the note F♮ in the bass of the second bar is not in that key, it is evident that there is here an enharmonic modulation, the chord being written in the notation of the new key. The chord in B♭ minor will have E♮, and will be the last inversion of the German sixth. The modulation, as proved by the last half of the second and the first half of the third bar, is to A♭ minor. In this key the chord * cannot be dominant, because of the G♭, nor supertonic because of the D♭; it must therefore be the last inversion of a derivative of the tonic minor thirteenth (§ 575).

616. The progression of the harmony in the fourth and fifth bars is the same as that just analyzed. The chord * in the fourth bar is taken as the last inversion of a German sixth in A flat (the notation of three notes being enharmonically changed), and quitted as the last inversion of a derivative of a tonic thirteenth in F sharp minor, which is resolved in the next bar on the dominant harmony of that key. At first sight the chords marked * in the second and fourth bars of this extract look like third inversions of dominant sevenths in C♭ and A; but

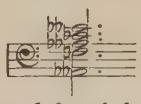
they cannot be so regarded, because these keys are never established. The chords in question must therefore be taken in their relation to the keys next following.

617. One of the most beautiful and novel harmonic progressions ever written will be seen in our next example.

Ex. 553. DVOŘÁK. Spectre's Bride.



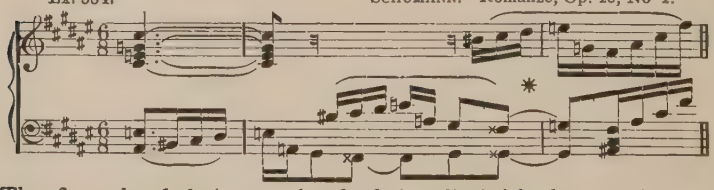
This passage commences in C minor, and passes rapidly through D♭ to C♭ major, whence by a simple, but most unexpected, enharmonic change, a return is made at once to C♮ major. The chord * is taken as the augmented sixth in C♭, its notation in that key being



If the chords in the third and fourth bars be written in B♮ major (the enharmonic of C♭), the student will follow the progression more easily, as then only one note will need to be changed for the key of C. It will be a useful exercise for him to do this for himself; we shall therefore not do it for him. In this passage we see the converse of the modulation shown in Ex. 551.

618. Our last example is chosen to show the student how to overcome some of the difficulties arising from false notation in the extreme keys, as well as from incomplete, or merely suggested harmonies.

Ex. 554. SCHUMANN. Romanze, Op. 28, No 2.

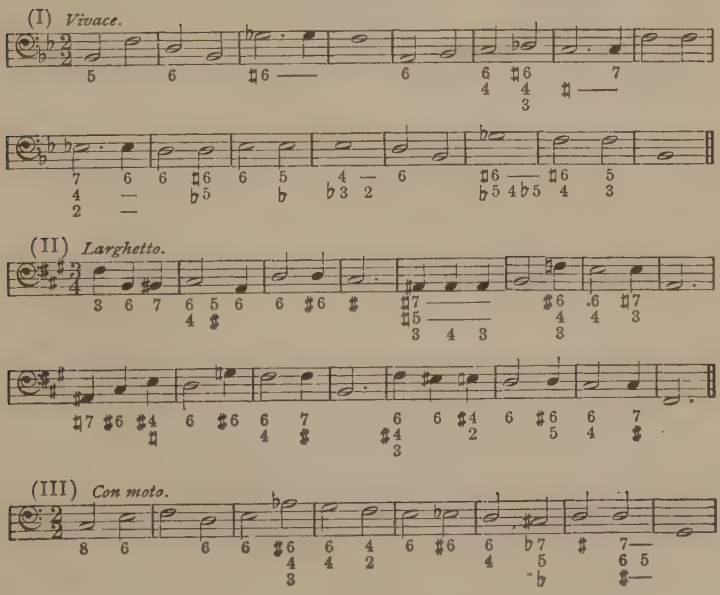


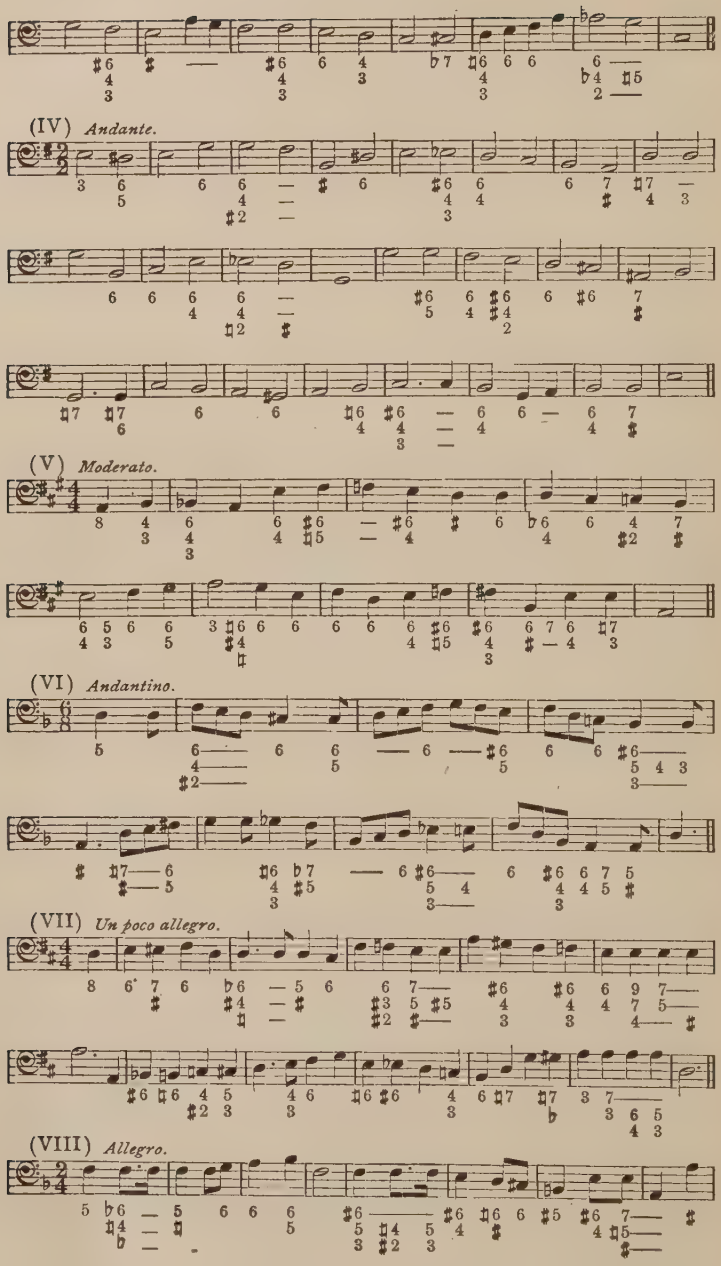
The first chord, being a chord of the diminished seventh, can be (as we already know, § 544), in *any* key. We look at the next bar to see what key the music goes into, and we find C♯ minor clearly indicated by the A♮, B♯, and F×. The fourth quaver of the bar is an outline chord of the augmented sixth, in its last inversion, with the diminished third; for this interval

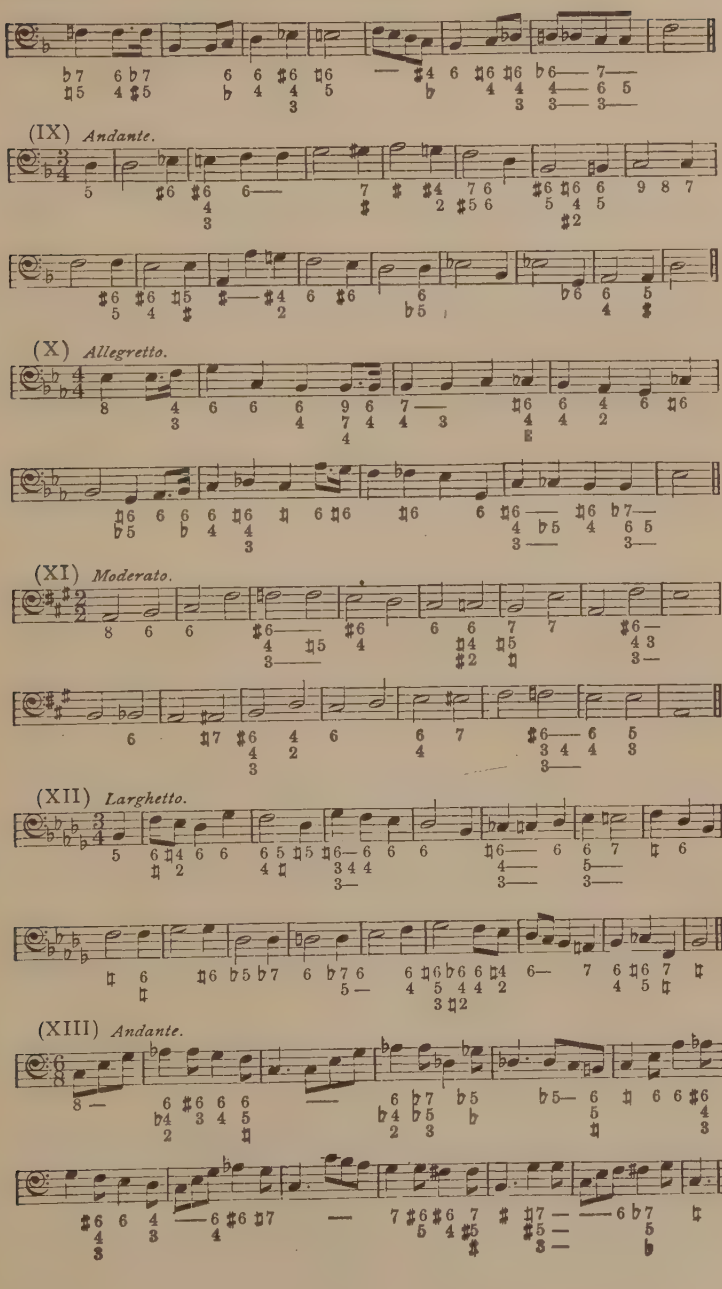
occurs in no other chord. The G × must be of necessity a false notation for A ♮, because of the E ♮ in the upper part at the beginning of the last bar; for no chord which contains E ♮ as one of its notes can possibly also contain G ×. The chord at the end of the bar is therefore the augmented sixth A ♮, C ♯, F ×; the last note is enharmonically changed to G ♮, the change being exceptionally written, and the chord is left as a derivative (♭VII ♭7) of a tonic minor thirteenth in B major, and resolved on the dominant of that key. The enharmonic change is the same as in the passage from Bach given in § 481; and the G × was evidently written by Schumann instead of A ♮ because of the note resolving by rise of a semitone—as we have so often seen to be the case with the minor ninths and thirteenths.

619. The student will no doubt find the analyses just given somewhat difficult to follow. Such passages require, but they will certainly repay, careful study. It must not be supposed that we have given all the possible examples of such modulations. This our space will not allow; we can only give a few representative specimens. Besides this, the resources of art are not yet exhausted; new combinations are constantly being discovered, and it is certain that whenever such combinations are good, they will be capable of a satisfactory theoretical explanation.

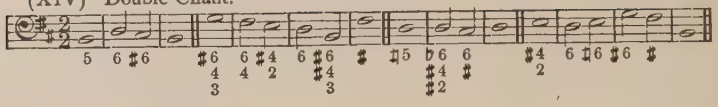
Exercises.



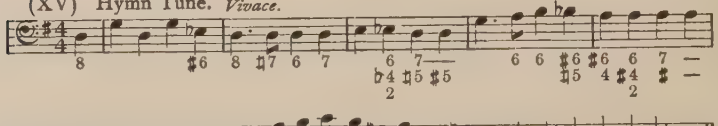

(IV) Andante.
(V) Moderato.
(VI) Andantino.
(VII) Un poco allegro.
(VIII) Allegro.

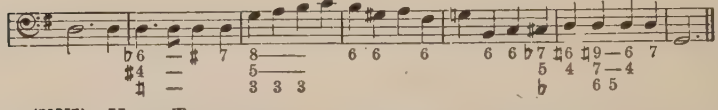

(IX) Andante.
(X) Allegretto.
(XI) Moderato.
(XII) Larghetto.
(XIII) Andante.

(XIV) Double Chant.

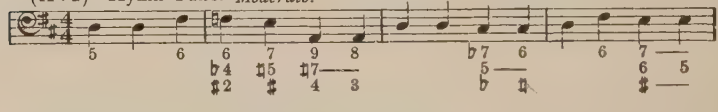


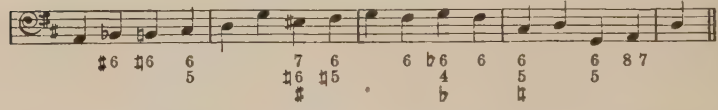
(XV) Hymn Tune. *Vivace.*



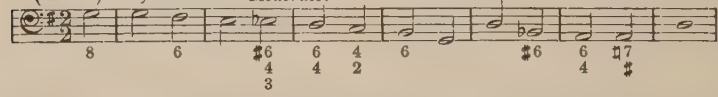


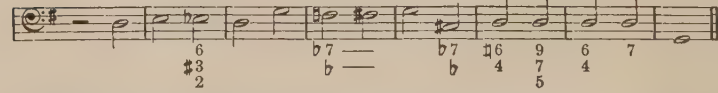
(XVI) Hymn Tune. *Moderato.*



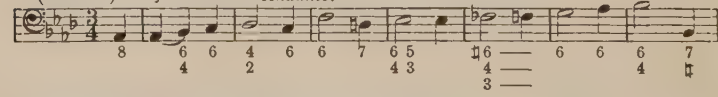


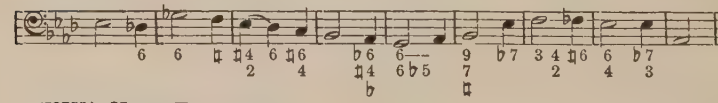
(XVII) Hymn Tune. *Moderato.*



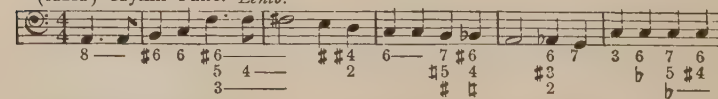


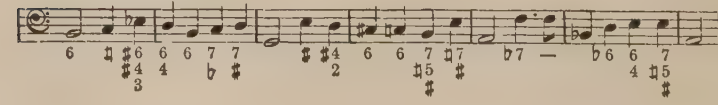
(XVIII) Hymn Tune. *Andante.*





(XIX) Hymn Tune. *Lento.*





CHAPTER XX.

PEDALS.

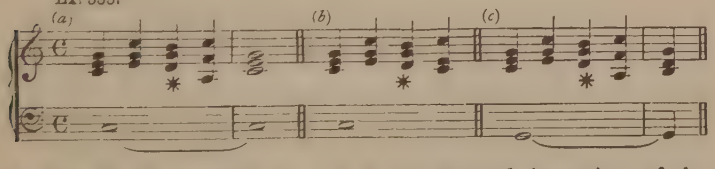
620. A PEDAL is a note sustained by one part (generally, though not invariably, the bass) through a succession of harmonies of some of which it does, and of others it does not, form a part. The name is no doubt derived from the pedals of the organ, which are used to play the bass of the harmony, as is evident from the fact that what we call a pedal is called in France and Germany an "Organ-point."

621. The note used as a pedal is invariably either the Tonic or the Dominant, the latter being the more common. A tonic pedal is mostly found toward the end of a movement, though it is sometimes met with at the beginning. A well-known instance of this is the opening of the Pastoral Symphony in the "Messiah."

622. It is not unusual for the same piece to contain toward the end both a dominant and a tonic pedal; when this is the case, the dominant pedal almost always comes first, the tonic pedal being reserved for the close. A very good example of this may be seen in the last ten bars of the great five-part fugue in C♯ minor in the first book of Bach's "Wohltemperirte Clavier."

623. When the pedal note forms no part of the chord above it, the note next above the pedal is considered as the real bass of the harmony for the time being, and is not allowed to move in a way in which it could not move were it a bass note. An example will make this clear.

Ex. 555.

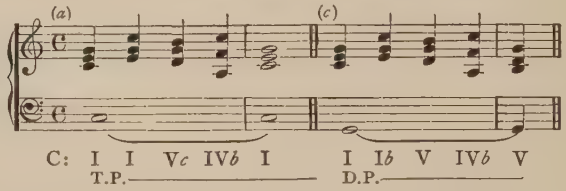


At the third crotchet of (*a*) is the second inversion of the dominant chord over a tonic pedal. The pedal note is not a part of the chord; therefore D, the bass for the time being, may not leap to A (§ 189. III). But the progression at (*b*) is quite correct. If, however, the passage at (*a*) were over a *dominant* pedal, as at (*c*), it would be quite correct; for then the chord ✱ would be, not a second inversion, but a root-position, because the pedal note is the root of the chord.

624. In marking the analysis of a "Pedal point"—that is a passage containing a pedal,—the pedal note is to be indicated

by D.P. (dominant pedal), or T.P. (tonic pedal), placed under the roots and followed by a line continued as long as the pedal lasts. The chords above the pedal, *except those of which the pedal note is itself the root*, are to be marked without reference to the pedal at all, even though the pedal may be one of the upper notes of the chord. To show this clearly, we give (*a*) and (*c*) of Ex. 555, with the analysis marked below them.

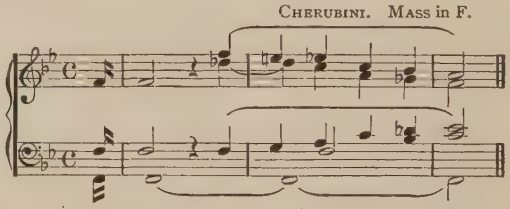
Ex. 556.



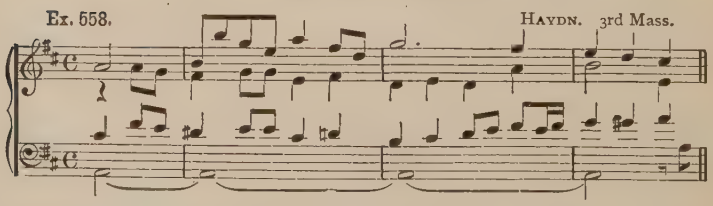
At (*a*) the second chord is marked I (not I*b*), and at (*c*) the third chord is marked V (not V*c*), because in both cases the pedal notes are the roots of the chords. But at (*c*) the first two chords are marked I and I*b*, (not I*c*); because the dominant pedal, though a note of the chord, is not the *root*. The student should by this time be so accustomed to analysis that, to save space, we shall not mark the roots, excepting in one case to be seen presently (Ex. 560).

625. The following examples of dominant pedals require little explanation.

Ex. 557.



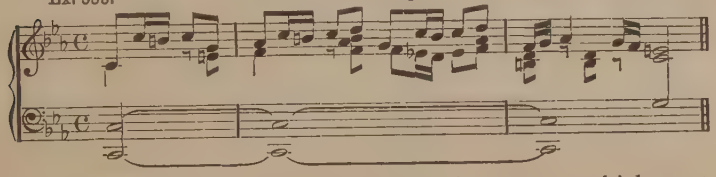
Ex. 558.



At Ex. 557 is a dominant pedal in the key of B flat minor, and at Ex. 558 a dominant pedal in the key of D major. Note that at the beginning of the second bar of this Ex. there is a transitional dominant of E minor, and at the end a modulation to A major, the dominant pedal thus becoming for the time a tonic pedal.

626. The end of the second fugue of Bach's "Forty-eight" gives an excellent example of a tonic pedal, ending with a "Tierce de Picardie" (§ 229).

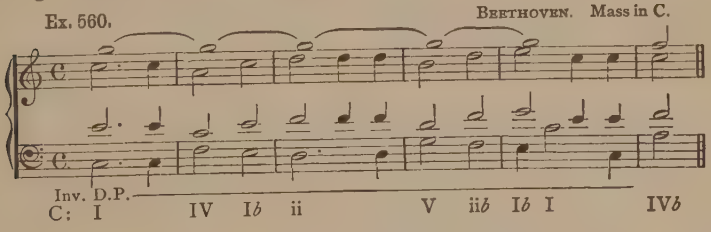
Ex. 559. BACH. "Wohltemperirte Clavier," Book 1, Fugue 2.



This passage illustrates a point of some importance which must here be noted. The fugue from which it is taken is for three voices (or parts), but the pedal note itself is not reckoned as one; it will be seen that in the last bar of the extract there are three parts exclusive of the pedal. This is a case of very frequent occurrence, both in three and four-part harmony.

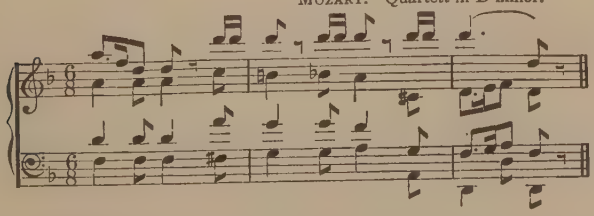
627. Though a pedal note is most often found in the bass, it is by no means unusual to meet with it in an upper, or (more rarely) in a middle part. In such a case it is called an "Inverted Pedal." In our analysis, an inverted pedal, whether in an upper or middle part, is indicated by "Inv. D.P." or "Inv. T.P." placed over (not *under*,) the other roots. To show this, we give the analysis of our next example.

Ex. 560. BEETHOVEN. Mass in C.



MOZART. Quartett in D minor.

Ex. 561.

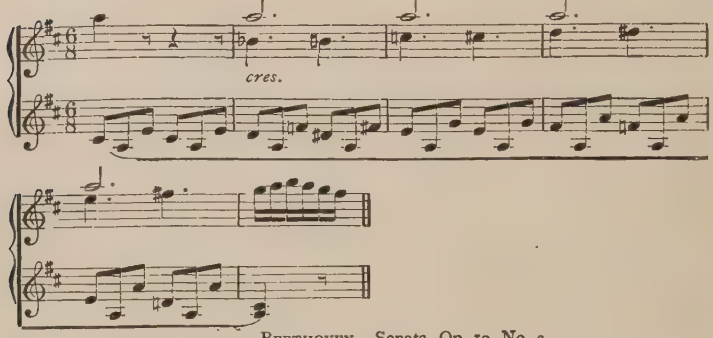


At Ex. 560, of which the voice parts only are given, is seen the dominant in the upper part of the harmony, sustained as a pedal note, and at Ex. 561 is the tonic, also in the upper part, similarly treated.

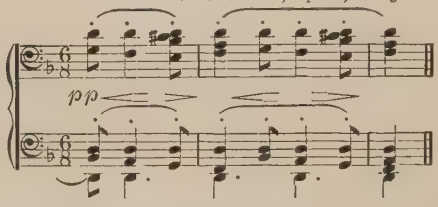
628. Sometimes a pedal note is found at the same time

above and below, as in the following examples:—

Ex. 562. MOZART. Sonata in D.



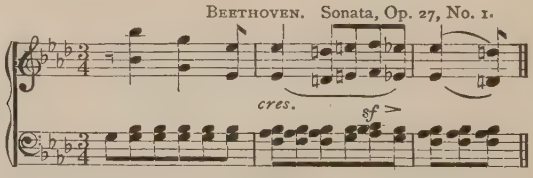
Ex. 563. BEETHOVEN. Sonata, Op. 10, No. 3.



The student will remember what has so often been insisted upon —that broken chords (as in the bass of Ex. 562) are harmonically the same as if all the notes were struck together (§ 228). At Ex. 562 we see a dominant pedal, and at Ex. 563 a tonic pedal in the highest and lowest part of the harmony at the same time; in this latter passage, the pedal note is also in the middle.

629. A pedal note in a middle voice is somewhat rarer. An example has already been seen in Ex. 441. We add another of a somewhat different character.

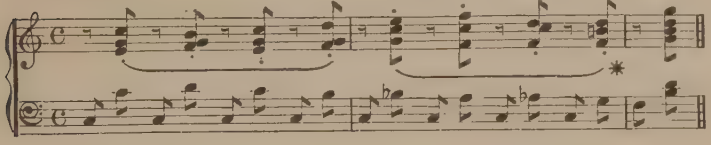
Ex. 564. BEETHOVEN. Sonata, Op. 27, No. 1.



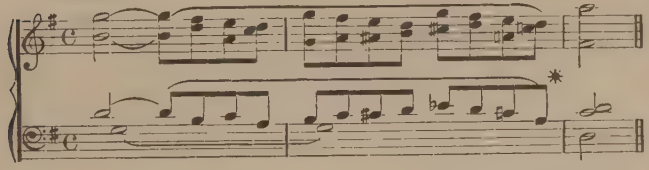
The fifth quaver of the second bar is here evidently the first inversion of the chord of F minor, and the B is a dominant pedal. The special interest of the passage arises from the fact of the pedal note being so close to the other notes of the harmony. In the orchestra, with different qualities of tone, such combinations are common enough; on the piano they are very rare.

630. A pedal point often begins, and generally ends, with a chord of which the pedal note itself forms a part. This has been the case in all the examples hitherto given ;* but it is by no means invariable, as the following passages prove :—

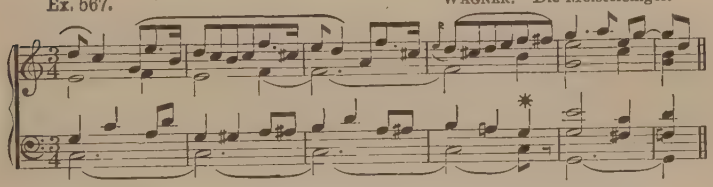
Ex. 565. BEETHOVEN. Sonata, Op. 14, No. 2.



Ex. 566. AUBER. Masaniello.



Ex. 567. WAGNER. Die Meistersinger.



In each of these examples it is a tonic pedal that is thus quitted ; and the bass leaps, in the first case to the subdominant, and in the other two to the dominant. So much judgment and experience are required to know when it is advisable to quit a pedal in this manner, that the student is advised to adhere to the general practice rather than to imitate these somewhat rare exceptions.

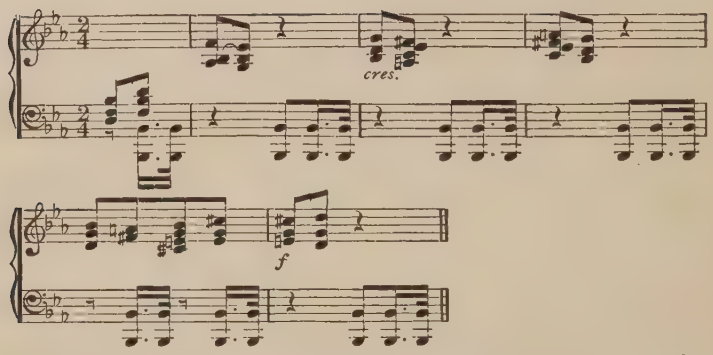
631. The old masters seldom modulated much on a pedal ; beyond the keys in which the pedal was tonic or dominant they rarely ventured, excepting into the key of the supertonic minor, as in the passage from Haydn, Ex. 558. Modern composers, however, recognize no such restriction ; and almost any modulation may now be used on a pedal. It is, however, very rare to find much modulation on an *inverted* pedal.

632. The following examples of free modulation on a pedal

* The old theorists give it as an invariable rule that a pedal point must end with a chord of which the pedal is one of the notes ; but in the light of modern practice this must be regarded as a recommendation rather than as a law

will be instructive.

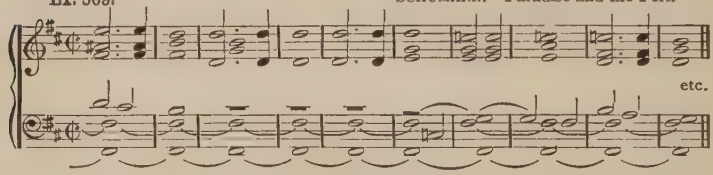
Ex. 568. MENDELSSOHN. Variations, Op. 82.



Here we see a dominant pedal in E flat; at the third bar a modulation is made to G minor, and the music continues in that key to the end of the extract.

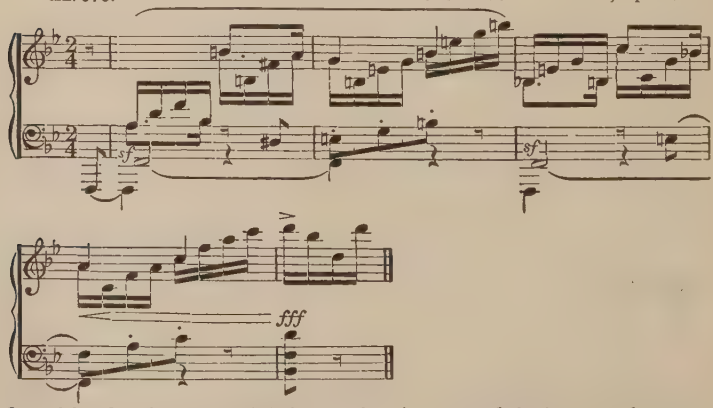
633. Our next passages are more curious.

Ex. 569. SCHUMANN. Paradise and the Peri.



We have here a dominant pedal in B minor, with a distinct modulation to G major; in the continuation of the passage, a further modulation is made to E minor.

Ex. 570. SCHUMANN. Humoreske, Op. 20.

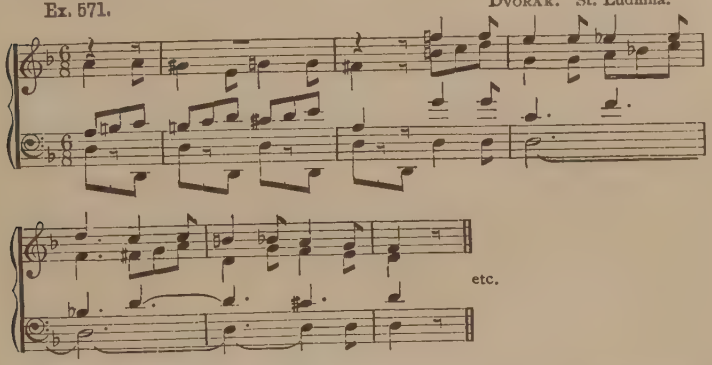


On this dominant pedal in B flat is a modulation to the very

remote key of E minor, the music returning at once to the key of B flat.

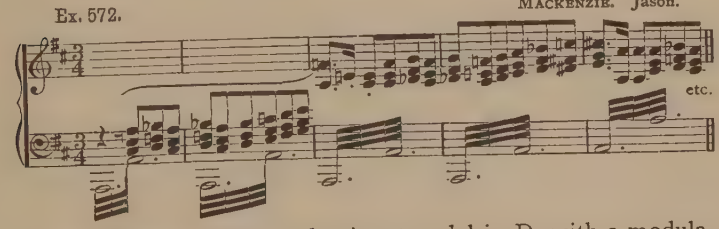
634. Two examples by living composers will conclude our illustrations of this point.

Ex. 571. DVOŘÀK. St. Ludmila.



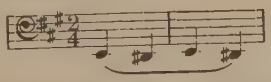
Here is seen a tonic pedal in D minor, on which is a modulation to the keys of C and B flat.

Ex. 572. MACKENZIE. Jason.



In this passage there is a dominant pedal in D, with a modulation in the third bar to the key of F.*

635. It is possible, though rare, to introduce ornamentation on a pedal note. In his organ fugue in D minor in the Dorian mode, Bach has a shake on a pedal; and towards the close of the finale of his symphony in A, Beethoven introduces a pedal E alternating with an auxiliary note.



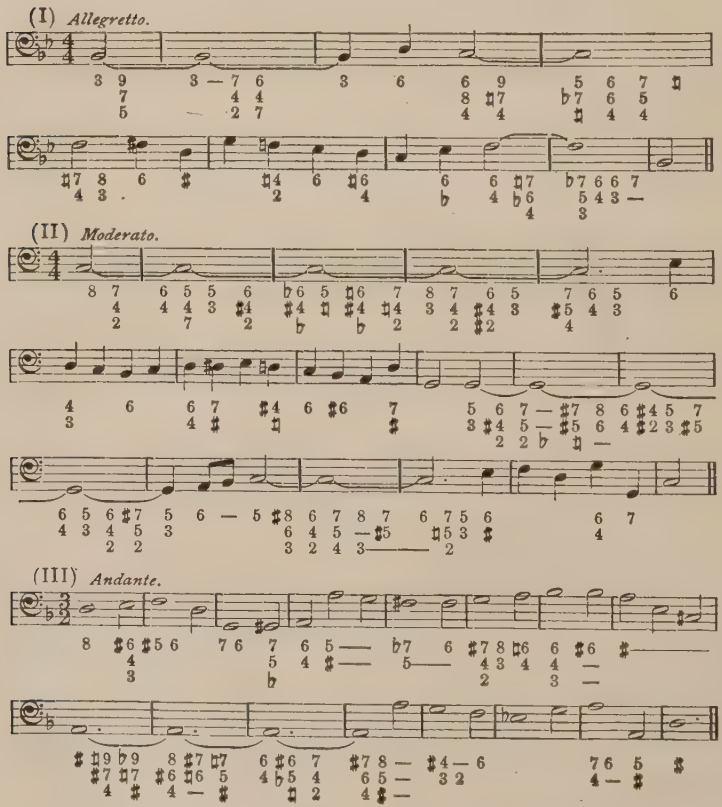
636. A double pedal, with both dominant and tonic sustained, is sometimes to be met with; but in this case the tonic must be below the dominant, otherwise the fourth above the

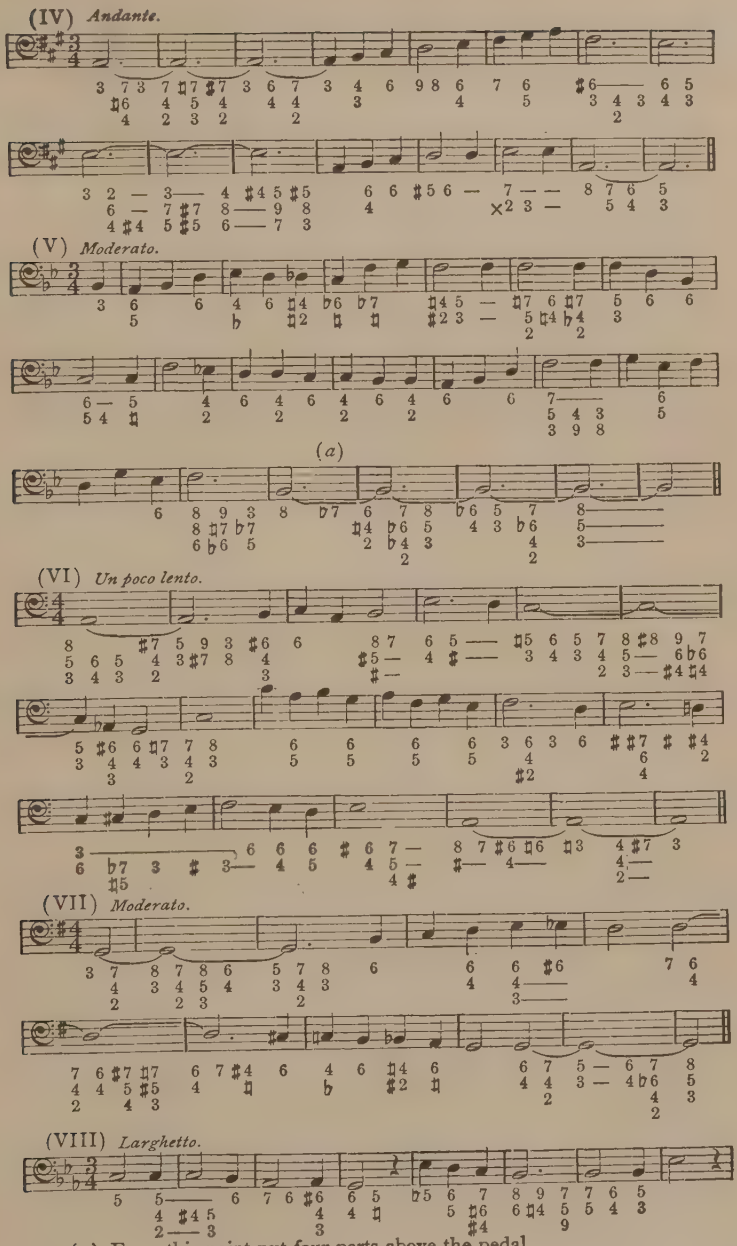
* Some theorists strictly forbid any modulations on a pedal except those referred to in § 631; but, provided the modulations are properly managed, the restriction appears unnecessary.

bass will produce an unpleasant effect. An example will be seen in Ex. 545. With a double pedal it is rare to find chords of which neither pedal note forms a part. A very fine example of a double pedal, which is unfortunately far too long to quote, will be found at the end of No. 2 of Brahms's "Deutsches Requiem."

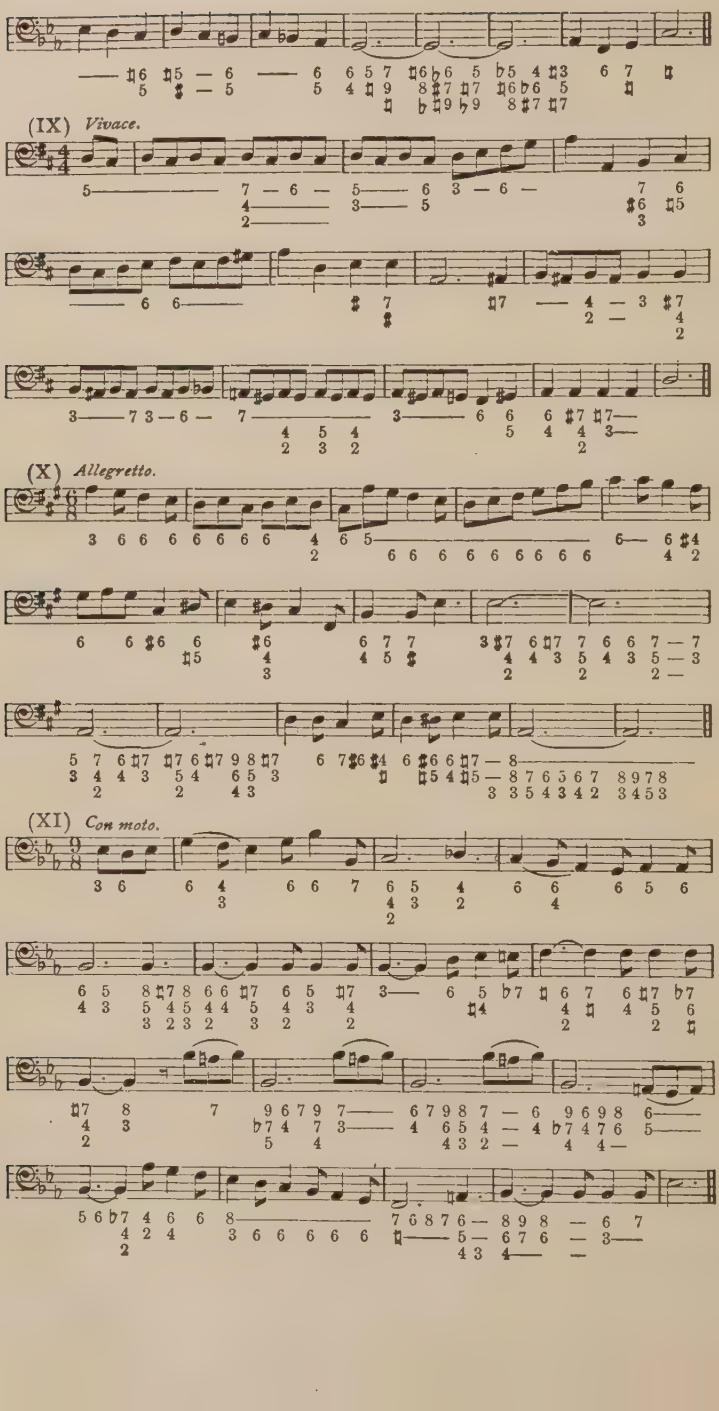
EXERCISES.

[The figures of these exercises will require very careful attention, as numerous combinations not hitherto met with will be found. In many cases the figures are placed in an unusual order (see, for instance, bars 1 and 3 of the first exercise). When this is done, it is to show the student the progression of the different voices. In a few passages (see exercises V, VII, and XIII,) where four figures are placed under a pedal, it indicates that there is to be four-part harmony, exclusive of the pedal note itself. The last exercise is written for five-part harmony throughout.]

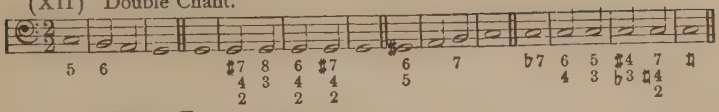




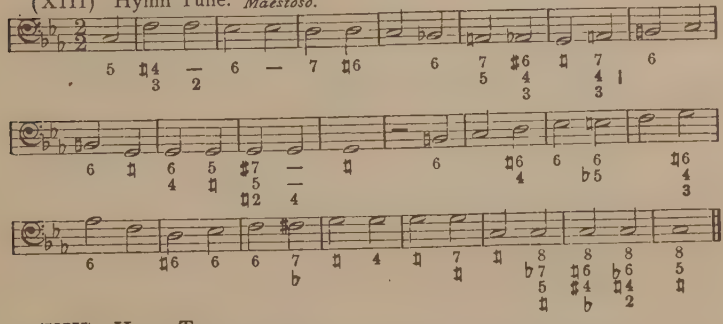
(*a*) From this point put four parts above the pedal.


(IX) Vivace.
(X) Allegretto.
(XI) Con moto.

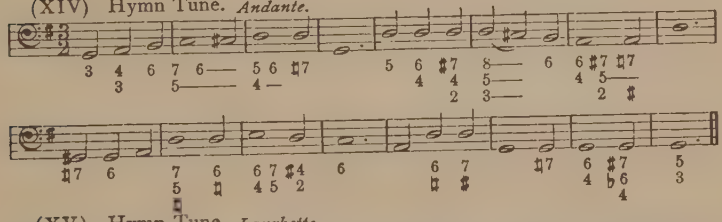
(XII) Double Chant.



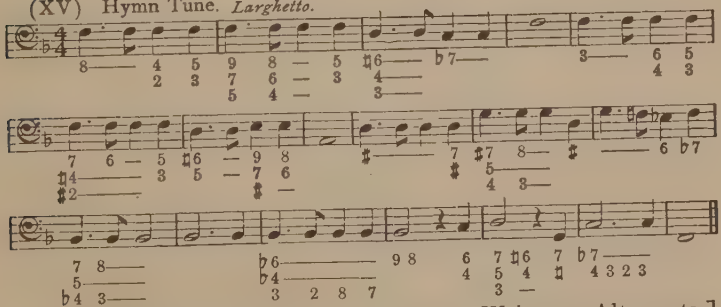
(XIII) Hymn Tune. *Maestoso.*



(XIV) Hymn Tune. *Andante.*

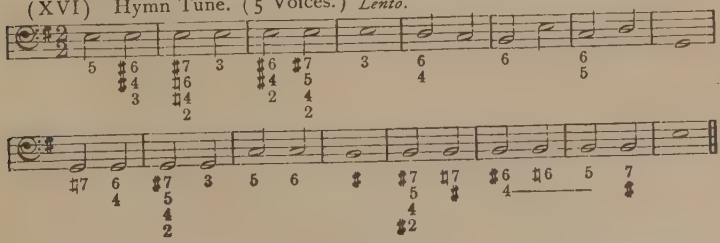


(XV) Hymn Tune. *Larghetto.*



[The following tune is for five voices. Write two Alto parts.]

(XVI) Hymn Tune. (5 Voices.) *Lento.*



CHAPTER XXI.

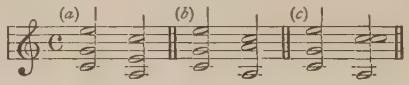
HARMONY IN FEWER AND MORE THAN FOUR PARTS.

637. Though four-part writing is justly considered the foundation of harmony, it is very seldom that a composition of any greater dimensions than a hymn-tune is found in which the harmony is in four parts throughout. Even in a quartett, one part, and sometimes two, often have rests; while in instrumental compositions we frequently meet with passages in five, six, and even more parts. We shall therefore conclude this book with a chapter explaining the general principles by which a composer is to be guided when writing in fewer or more than the four parts hitherto treated.

THREE-PART HARMONY.

638. In writing in three parts, it is clear that if all the notes of a triad are present none can be doubled. It is advisable, where practicable, to introduce all the notes of the triad; but it frequently becomes needful to omit the fifth, *e.g.*,

Ex. 573.



If the chord of C be followed by the chord of A minor, both being in root-position, and with the third of each chord at the top, it is clear that if we introduce the fifth in both chords, as at (*a*), we shall have consecutives; it will therefore be necessary to double either the root, as at (*b*), or the third, as at (*c*), in the second chord.

639. In chords containing more than three notes, the most characteristic notes of the chord should be retained. Thus in a chord of the seventh, if the root be present, the fifth should be omitted, so as to keep the third and seventh; similarly, in a root-position of a chord of the ninth, either the third or seventh, and in a derivative of the ninth both these notes should be retained. Not seldom, however, one of the parts takes two notes of the harmony in succession, as in the first bar of Ex. 197 where the upper part moves from the seventh to the fifth, and the middle part from the fifth to the third of the chord.

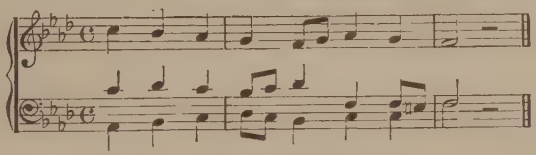
640. In instrumental music, three-part harmony is often virtually in four parts because of one of the parts moving in arpeggio. For instance, in Ex. 360, there are never more than three notes sounded at once; but the middle part being in arpeggio, there is practically four-part harmony throughout. This is not three-part writing in the sense in which we are treating of it now.

641. The rules for the position of the chords given in §§ 94, 95, apply no less to three-part than to four-part harmony. The parts should either be at approximately equal distances, or the largest interval should be between the bass and the part next above it, as in Ex. 264. But in vocal music the compass of the voices may render it necessary to break this rule. Cherubini's first mass is written for three voices—soprano, tenor, and bass; and in many passages it would be impossible to place the tenor nearer the soprano than the bass.

642. In a full cadence in three parts it is desirable that the penultimate chord (the dominant in its root-position), should be in as complete a form as possible, even if this involves leaving the final chord incomplete. Thus in the following cadence,—

Mendelssohn. St. Paul.

Ex. 574.

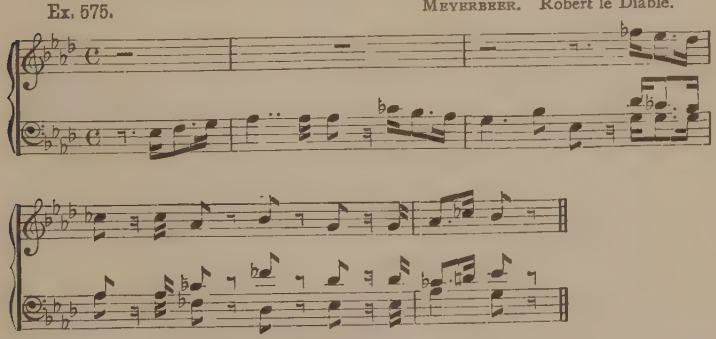


the tonic appears without either third or fifth.

643. The close of the example just given illustrates another important principle—that the part-writing should have special regard to the motion of the separate parts. The fewer the parts, the more clearly each is individualized. Had Mendelssohn made his tenor leap to A♭ for the sake of having the third in the last chord, the purity of the part-writing would have been impaired.

644. We now give two examples, one vocal and one instrumental, to illustrate the principles laid down.

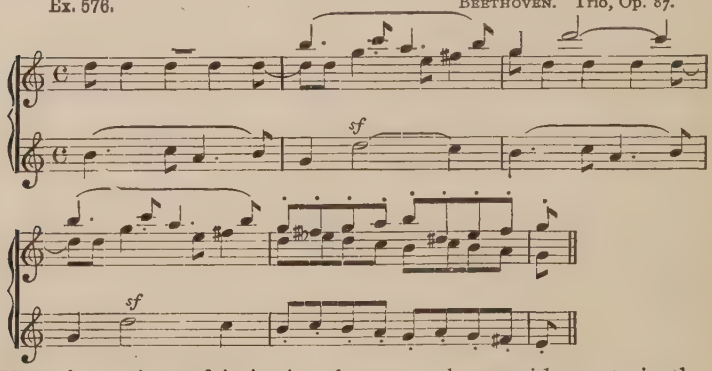
Ex. 575. Meyerbeer. Robert le Diable.



This passage is the opening of the unaccompanied trio in the

third act of the opera. Notice how the chords are mostly complete, and observe the reasons for the exceptions.

Ex. 576. BEETHOVEN. Trio, Op. 87.



Here is a piece of imitation between the outside parts in the first four bars. In the fifth bar it will be seen that for the sake of an easy flow of the parts, the two leading notes, which are implied (F♯ in the fourth quaver and D♯ in the eighth), are omitted, though they are important notes of the chord. As an excellent specimen of pure three-part harmony, the student is recommended to analyze the trio "Lift thine eyes," in "Elijah."

TWO-PART HARMONY.

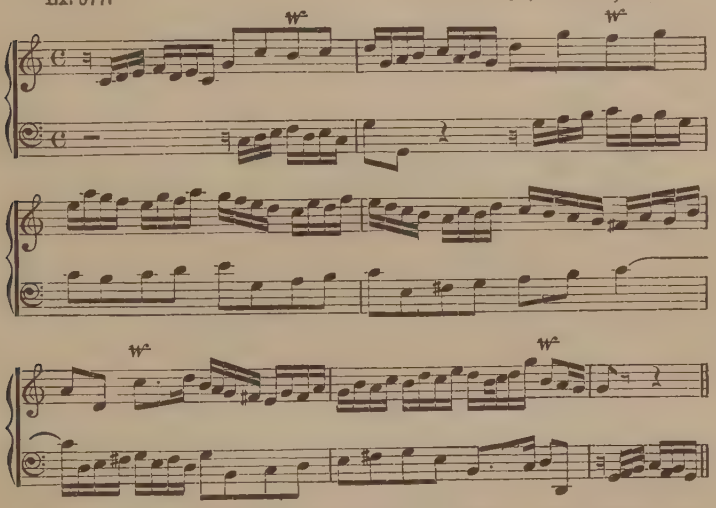
645. Harmony in only two parts differs in one very essential respect from harmony in three or four. As every chord consists of at least three notes, it is obviously impossible here to have any chord in a complete form. In two-part writing, therefore, the harmony is merely suggested or indicated, and the chords are only outline, or skeleton chords.

646. Genuine two-part harmony is somewhat rare; but we very often in instrumental music find passages written in only two parts, but of which one, being in arpeggio, indicates in reality three, or even four-part harmony. To refer to some of the extracts already quoted in this volume in Exs. 152, 255, 301, and 400 three-part harmony is evidently present, though the notes of two of the three parts are sounded in succession, instead of together; while the passages in Exs. 254 and 494 no less clearly indicate four-part harmony.

647. It is common even in the strictest two-part writing (which is found more frequently in instrumental than in vocal music) to find broken chords, as in the examples above referred to. There is not the least objection to these; the important point is that the suggested harmony shall be perfectly clear. Some of the most masterly specimens of two-part harmony ever

written are Bach's "15 Inventions"; the opening of the first is given here.

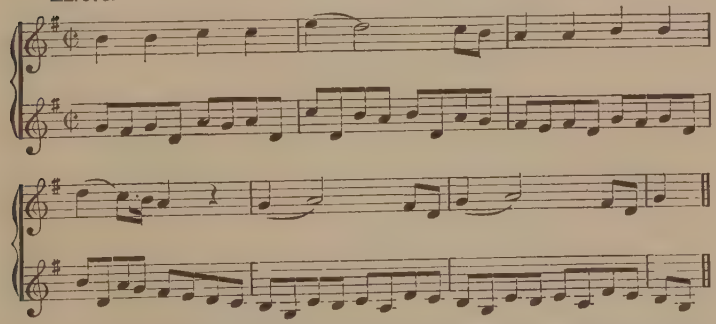
Ex. 577. Bach. Inventio, No. 1.



Let the student examine this passage carefully, and notice how distinct is the indication of every chord. The addition of middle parts here would increase the fulness, but not the clearness of the harmony.

648. Our next example will be of later date.

Ex. 578. Mozart. Duet for Violin and Viola.



Here, while we have several broken chords, a great part of the harmony is strictly in two parts, an additional part being scarcely suggested.

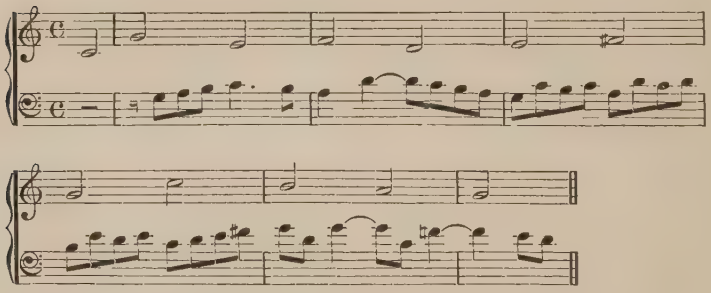
649. Two-part harmony continued for any length of time is comparatively rare in vocal music; even in duets for voices the harmony is mostly completed by the accompaniment. As

an example of this, let the student refer to the extract from the duet "The Lord is a man of war" quoted in Ex. 451. Here the two voice-parts, which are printed on the upper staff, are supplemented by the orchestra. The rule in such cases as this is that the voice parts must make correct, though not necessarily complete harmony by themselves. A progression of two voices in fourths thus—

would therefore be incorrect, even although an instrument played in thirds below the lower voice. If another voice adds the thirds below, the harmony will be correct. The passage just given is taken from the trio "Lift thine eyes" in "Elijah," omitting the lowest voice part.

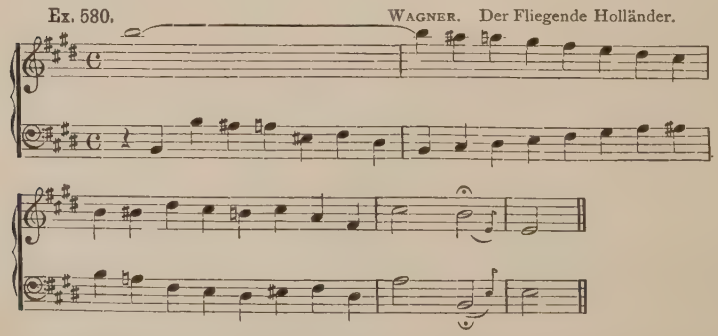
650. We now give two examples of vocal two-part harmony. The first—

Ex. 579. Handel. Judas Maccabæus.



is the commencement of a double fugue given out by the alto and tenor voices. The second—

Ex. 580. Wagner. Der Fliegende Holländer.



is a *cadenza* for unaccompanied solo voices. The fact of its being a cadenza is indicated in the original by its being printed

in small notes; this also explains the irregular time of the first three bars. It will be seen that the outline of the harmony in this passage is perfectly clear.

HARMONY IN MORE THAN FOUR PARTS.

651. There is hardly any limit to the possible number of parts in which harmony may be written. Orazio Benevoli, an Italian musician of the 17th century, composed many masses and anthems for sixteen, and even for twenty-four voice parts. But the most astonishing feats in part-writing are probably Tallis's "Forty-part Song," and the Kyrie and Gloria" in 48 real parts by Gregorio Ballabene. Such pieces are merely ingenious curiosities; but harmony in ten, twelve, and more parts is by no means uncommon in the works of Bach. The opening chorus of his cantata "Herr Gott, dich loben alle wir" (founded on the choral known in this country as the 100th Psalm) is mostly in fifteen real parts; and many similar instances might be given. Among modern composers, Brahms and Wagner are especially distinguished for their skill in "polyphonic" (many part) writing; while of our own countrymen the place of honour in this department is probably due to the late Rev. Sir Frederick Ouseley.

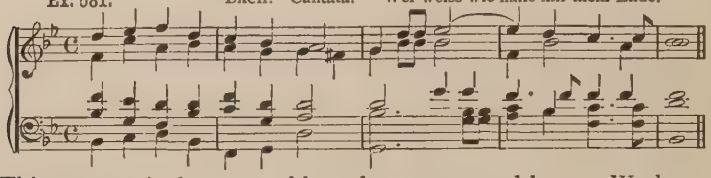
652. It will readily be understood that every part above four added to the harmony increases the difficulty of the task, because of the danger of incorrect progressions, consecutives, etc., which it is needful to avoid. But in proportion as the number of parts, and therefore the difficulty, increases, the stringency of the rules relaxes. Thus, hidden fifths and octaves are allowed, even when both voices leap; consecutive octaves and fifths by contrary motion may be used freely; we even meet in the works of the great masters with examples of a doubled leading note, though it is better to avoid this, if possible. No new rules need be given for writing in more than four parts; the practice of the best composers will be most clearly understood by a careful study of the examples now to be given of harmony in five, six, seven, and eight parts. Beyond this number it is not needful to go.

653. In writing for more than four parts, the general rules already given (§ 97), that in general it is better to double a primary note of the key than a secondary one, will be found most useful. Many cases will doubtless be found in which it is necessary to double a secondary note; but this does not invalidate the general principle.

654. In adding to the four voice parts, it is immaterial which voice is the new one. In five-part harmony, the fifth voice is usually either a second soprano (as in the examples to be given

below) or a second tenor, as in the five-part choruses of Handel's "Acis and Galatea;" but instances may also be found of a second alto or second bass part.

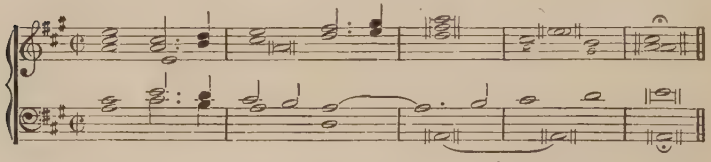
Ex. 581. BACH. Cantata.—"Wer weiss wie nahe mir mein Ende."

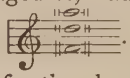


This passage is for two trebles, alto, tenor, and bass. We have placed the alto part on the lower staff, instead of the upper, as usual, because it makes the passage clearer to read.

655. Our next example is arranged in the usual way, the two trebles and the alto being on the upper staff.

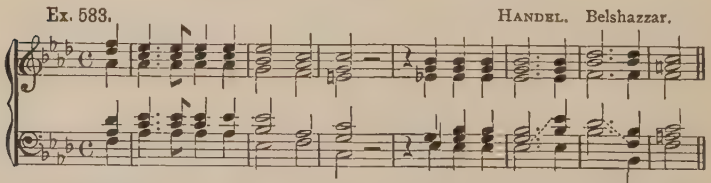
Ex. 582. MENDELSSOHN. "Tu es Petrus."



It will be seen that in the last bar but one the A and G on the upper staff are printed in small notes. The third of the chord, G, could not well be omitted, and Mendelssohn has therefore added it in the orchestra, as he had left no voice available. He might, however, have easily managed it, had he arranged the upper parts in the third bar thus  . As this would have been a more usual position for the chord, it is difficult to see why he did not adopt it.

656. Our next illustration will be in six parts.

Ex. 583. HANDEL. Belshazzar.

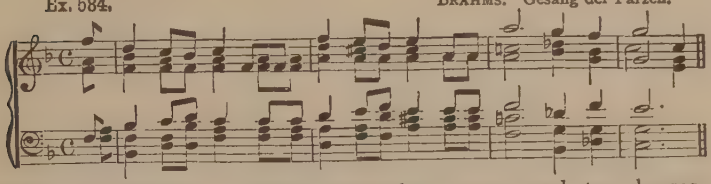


This passage is written for two trebles, alto, two tenors, and bass. The dotted lines on the lower staff indicate that the tenor parts cross each other. In the fifth and sixth bars the first tenor has B throughout. In more than five parts, and sometimes even with five, it becomes needful to cross the parts in order to avoid consecutive fifths or octaves. This is not the case in this particular passage, where the crossing seems to be

the result of a wish to give melodic interest to the second tenor part; but in the passages in seven and eight parts to be quoted shortly, such a procedure often becomes absolutely necessary.

657. The following extract,

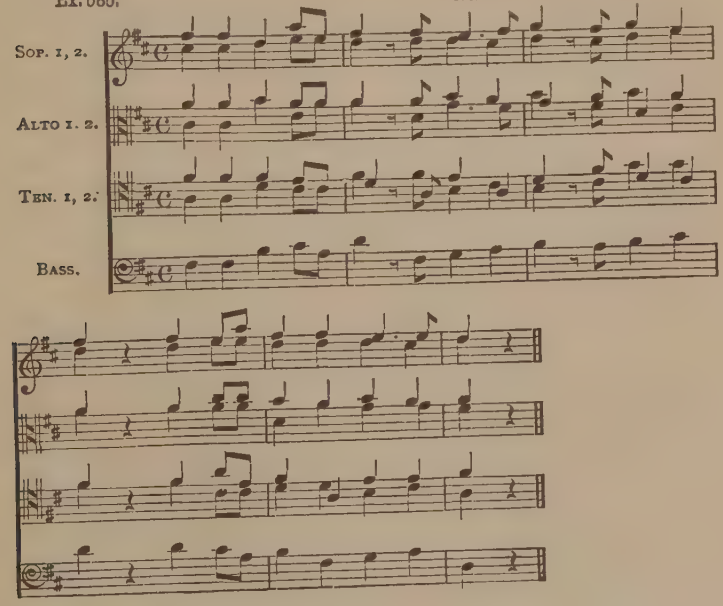
Ex. 584. Brahms. Gesang der Parzen.



which is written for treble, two altos, tenor, and two basses, affords illustration of some other points. Notice in the first chord the crossing of the tenor below the first bass to avoid consecutive octaves with the first alto. At the third crotchet of the second bar is an instance of a doubled leading note (§ 652); and in the last crotchet of the following bar is a doubled seventh, one F rising to G, and the other falling to E in the following chord. Observe that the F is here a *primary* note (§ 653).

658. Seven-part harmony is comparatively rare. In the example we give we have printed the passage in score, as it would have been impossible, had it been condensed on two staves, to show clearly the progression of the different voices.

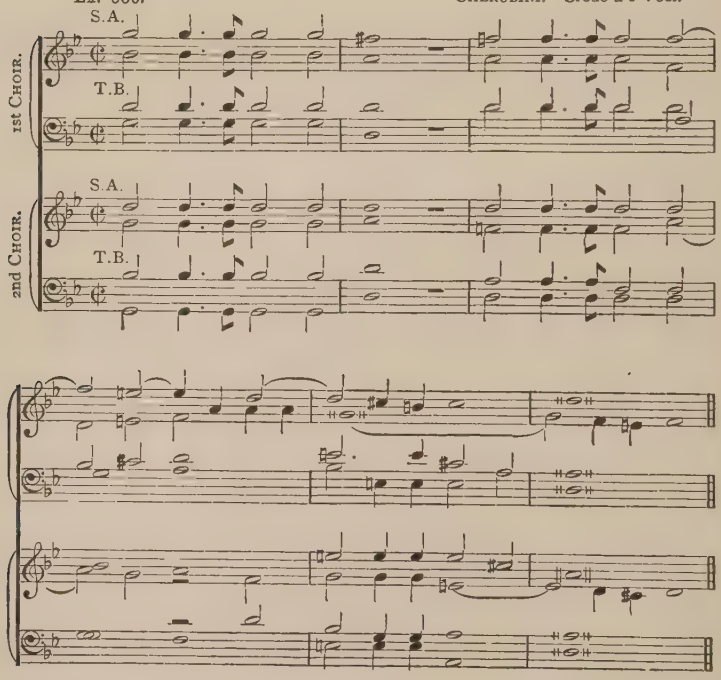
Ex. 585. Handel. Parnasso in Festa.



In this passage will be seen numerous crossings of the parts and the leading note doubled in every bar—at the end of the fourth bar it even appears in three parts. Between the last chord of the fourth bar and the first of the fifth are found consecutive perfect fifths between the first tenor and the bass. This is of course a slip of the pen, probably the result of the haste with which it is notorious that Handel composed; but such slips are by no means uncommon in his seven and eight-part writing.

659. Choruses in eight parts are much more common than in seven. Sometimes they take the form of double choruses, that is for two separate choirs, as in Handel's "Israel in Egypt" and Bach's "Passion according to Matthew;" at others, as in Handel's "Athalia" and Mendelssohn's 114th Psalm, we find only one choir, but with all the voices divided. We give one example of each arrangement.

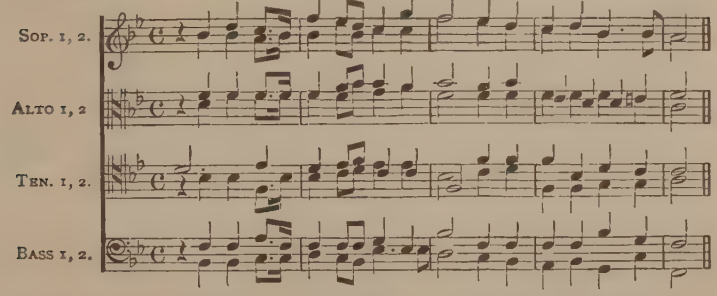
Ex. 586. Cherubini. Credo à 8 Voci.



Here we have printed each choir in "short score" (§ 110), as in previous examples. The part-writing is remarkably pure, and will repay close study.

660. In our second illustration

Ex. 587. Mendelssohn. "Am Himmelsfahrtstage," Op 79. No. 3.



we have only one choir instead of two; the voices are therefore arranged differently. It will be seen that after the first two bars the harmony is only in seven parts.

661. Much of what is called eight-part writing is not really such. For instance in Mendelssohn's Octett for eight stringed instruments, when all are employed at once some of the parts are mostly doubled in the octave or unison. This can be seen in the quotation given from this work in Ex. 456. Though there are eight notes, the harmony is not in more than five parts, some of which are doubled. Even in the strictest writing it is frequently expedient, for the sake of variety and contrast, to give rests to some of the voices, as great fulness of harmony, if too long continued, becomes tedious.

662. The student can now experiment for himself in writing for fewer or more than four voices. For two- and three-part harmony he will find the National Airs given on pages 20 to 30 of the *Additional Exercises to Counterpoint* very suitable; in these, the accompanying parts need not be treated as voice-parts. For more than four parts he can hardly do better than the harmonization of the chorals of which he will find a large collection in the book just referred to. He should of course make himself proficient in five-part writing before trying to work with a larger number of voices. He will also find it useful to harmonize for more than four parts some of the exercises given in this volume. In this case, he will sometimes find it expedient to take the first chord in a higher position than that indicated for four-part harmony, so as to allow himself more room for the additional voices.

663. In concluding this work, we offer one piece of advice to the student. Much, but not all, can be learned from a text-book; if the principles underlying the science of harmony are thoroughly grasped, endless instruction is to be gained from the

study of the great masters. It is from their works that the rules laid down in this volume have been deduced; the best theory is that which agrees most closely with their practice. It is impossible to make any text-book absolutely exhaustive; for art is always progressing. Let the earnest student, therefore, while founding his practice mainly on the example of the acknowledged masters of the past, not neglect to acquaint himself with the more modern developments of music; let him welcome what is excellent, from wheresoever it may come; and let his motto be, "Prove (*i.e.* test) all things; hold fast that which is good."

APPENDIX A.

THE ECCLESIASTICAL MODES.

664. It will be impossible within the limits of this volume to deal in detail with so large and intricate a subject as that of the old Ecclesiastical, or Church modes; but, as a certain amount of knowledge of them will be of great use to the student in helping him to understand much of the music of the older composers, we shall here give a short account of them.

665. The word "Mode" is the equivalent of what is now called *key*. The term is still employed in modern music, though in a much more restricted sense, when we speak of the "major and minor modes" of the same key (§ 37). But there is a most important difference between the ancient modes and modern keys. At the present day any major or minor key differs from every other one *only in its pitch*. The order of tones and semitones is identical; G major is the same scale as C major, and G minor as C minor, but transposed a fifth higher. With the Ecclesiastical Modes, on the other hand, which were in use before sharps or flats were introduced, and when only seven notes were employed within the octave, such transposition was impossible. As soon as the tonic—or, as it was then called, the "Final," was changed, the semitones must evidently fall between other degrees of the scale. In fact, no two of the old modes have the same order of tones and semitones.

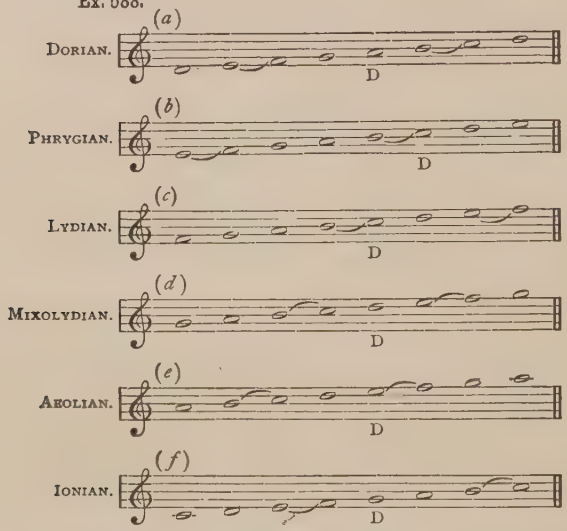
666. Any note could be taken as a Final (or, as we should now say, as a tonic,) excepting B, which was inadmissible because its fifth is a diminished fifth, and it would be impossible to place a common chord, either major or minor, above it. By writing an octave of notes, commencing on each note of the scale except B, and using natural notes only, we obtain the various ecclesiastical modes. Each of these was known by a name, borrowed from the Greek scales, though differently applied.*

667. We now give the six principal ecclesiastical modes, which were known as *Authentic*, *i.e.* superior modes. Each

* The names by which the modes are now known were first given to them by Glareanus, in a book entitled *Dodecachordon*, published in 1547, in which he treats of the twelve church modes, and shows their connection with the ancient Greek modes. For some not very evident reason, probably from a misunderstanding, he altered all their names, the ecclesiastical Dorian being the Greek Phrygian, etc.

mode begins and ends upon its final; we show the position of the semitones by slurs.

Ex. 588.



668. Each of these modes had a note called a *Dominant*, or prevailing note. This word was used in quite a different sense from that in which it is now understood. It was so called from its being next in melodic importance to the Final, not because of its harmonic relation to that note. In the authentic modes the dominant was always the fifth note above the final, except only in the Phrygian mode, in which B was inadmissible as a dominant, because it could not take a common chord above it. In this mode therefore C, as the nearest note to B, was substituted for it. In the scales we have just given the dominant is marked with "D."

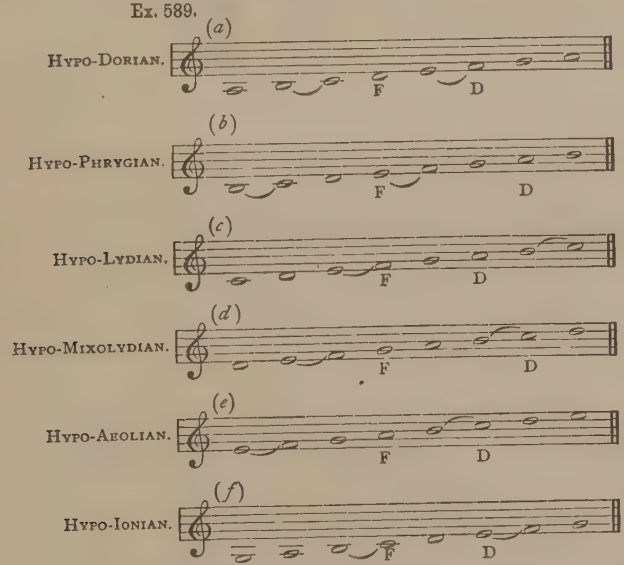
669. Each of the six modes of which we have been speaking had an inferior, or dependent mode, known as a *Plagal* mode, connected with it. These modes contain the same notes as the corresponding authentic modes, but begin on the fourth note below the final, which note now comes in the middle of the scale, instead of as the first and last notes. The connection of the plagal modes with their respective authentic modes is shown by their having the same names, with the addition of the prefix Hypo-,—the Greek preposition meaning "under."

670. It might be supposed at first that the beginning on a different degree of the scale (a fourth lower), would change one authentic mode into another; *e.g.* that the Hypo-Mixolydian

would become the Dorian, or the Hypo-Aeolian the Phrygian mode. But this was not the case. In the Dorian mode D is the final; in the Hypo-Mixolydian, though its initial note is D, G is still the final. Besides this, though each plagal mode except the Hypo-Phrygian begins upon the dominant of the authentic mode, that note is now no longer the dominant. The dominant of any plagal mode is always a third below the dominant of the corresponding authentic mode, except in the Hypo-Mixolydian, in which B, the third below D, is unavailable as a dominant, just as it is as a final, because it has no common chord above it. Here therefore, as in the Phrygian mode, C is taken as the dominant.

671. We now give the six plagal modes, indicating the finals by "F" and the dominants by "D."

Ex. 589.



672. It must not be supposed that all melodies written in these modes were necessarily at the pitch here given. Obviously the Mixolydian and Aeolian modes would be too high, and the Hypo-Dorian and Hypo-Ionian too low for ordinary use. They could be transposed to any pitch that was most convenient; and the nature of a mode would be ascertained by observing the positions of the semitones, and, in the case of two modes containing the same notes (one being authentic and the other plagal,) by noticing which note was the final. As the last chord was always a chord on the final, there was no difficulty

in this. In an authentic mode the melody would lie approximately between the final and its octave; while in a plagal mode the melody would lie between the fourth below the final and the fifth above it.

673. Of the six authentic modes shown in Ex. 588, it will be noticed that three (the Lydian, Mixolydian, and Ionian,) have major chords on their finals, while the other three (the Dorian, Phrygian, and Aeolian,) have minor chords. It will also be seen that only the Lydian and Ionian have a leading note; in the other modes the final is approached by a tone from below.

674. Each mode had certain characteristic notes which distinguished it from every other mode. If a characteristic note of a mode be inflected, a change of mode, that is a *modulation*, is produced. For instance, we shall see directly that the characteristic notes of the Dorian mode (Ex. 588 (*a*)) are its minor third, F, and its major sixth, B. If we change F to F♯, we have a transposed Mixolydian mode; if we substitute B♭ for B♮, the mode becomes a transposed Aeolian. But the non-characteristic notes of a mode could in certain cases be chromatically altered, as will be explained presently.

675. Modulation—that is, change of mode, corresponding to the modern change of key,—could be effected in two ways; either the final itself would be changed, as we now change the tonic in modulating, or the same final could be retained, and the intervals above it altered—an analogous procedure to the modern modulation between the tonic major and minor. But while in modern music we modulate freely between any two keys, the modulations of the old modes were more restricted, and each mode had what may be termed its own favourite modulations.

676. We spoke just now (§ 674,) of the possible alteration of the non-characteristic notes of a mode. In the oldest music no alteration whatever was permitted; but as the development of the art advanced—even as early as the middle of the sixteenth century—the necessity for a leading note in the penultimate chord of a final cadence began to be felt. In this case, therefore, as we shall see directly, it was allowed in some of the modes to sharpen the note below the final, so as to have a major instead of a minor chord on the dominant. There were a few other cases in which alteration was also permissible; but into these we cannot now enter.*

677. We now give a short account of each mode, pointing

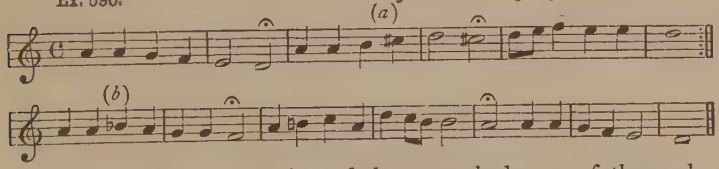
* Those who wish to study the subject are recommended to consult the article "Musica Ficta" in Grove's *Dictionary of Music and Musicians*, Vol. 2.

out its special features. It will only be needful to speak of the authentic modes, as the plagal are derived from these. We begin with

I. The Dorian Mode. One of the most important and most frequently used of the old modes. Its characteristic notes were the minor third and major sixth of the scale; their occurrence in the same melody are sufficient to establish the mode, because the other modes which have minor thirds (the Phrygian and Aeolian,) have also minor sixths; while the Lydian, Mixolydian, and Ionian modes, which have major sixths, have also major thirds. The primary chords of this mode, if all its notes are unaltered will be i, IV, and v, only the subdominant chord being major. But, as the seventh note of the scale, C, is not one of the characteristic notes, it was changed in the cadence, to C♯, thus becoming a leading note. It was also the general practice not to conclude with a minor chord on the final; either the third was omitted altogether, or the Tierce de Picardie was employed. In the whole of Bach's Chorals, numbering very nearly four-hundred, not more than about half a dozen end on a minor chord. The principal modulations of the Dorian mode were to the Aeolian, Mixolydian, and Ionian modes.

678. The following choral is a fine example of a melody in the Dorian mode.

Ex. 590. J. Crüger. "Jesu, meine Freude."

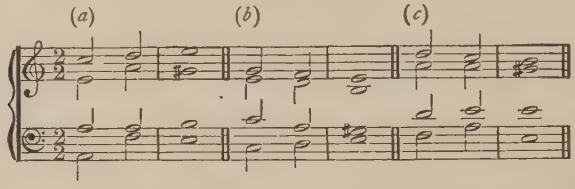


At (*a*) is seen the alteration of the seventh degree of the scale, just spoken of, in approaching a cadence; at (*b*) the introduction of B♭ shows a modulation—here to the Ionian mode transposed to F.

679. II. The Phrygian Mode. This, like the Dorian, is a minor mode, both third and sixth of the scale being minor. In this respect it resembles the Aeolian mode; but its characteristic note, which distinguishes it from all the other modes, is the *minor* second of the scale. Its primary chords will be i, iv, v°; but in the old music the chord of the diminished triad could not be used. It was impossible to substitute F♯ for F♮, because the latter is the characteristic note of the mode, and therefore cannot be altered. If we take F♯ in the scale of E, the mode is no longer Phrygian, but a transposed Aeolian. For this reason, as already said, C is taken as the dominant of this mode instead of B.

680. A special feature of the Phrygian mode is its final cadence. The last chord, except in some of the most ancient harmonies, is always major, and as there was no common chord on the fifth of the scale, the cadence of the Dorian mode was unavailable. In the older music the note D♯ did not exist; the semitone between D and E was always E♭. The usual cadences were therefore—

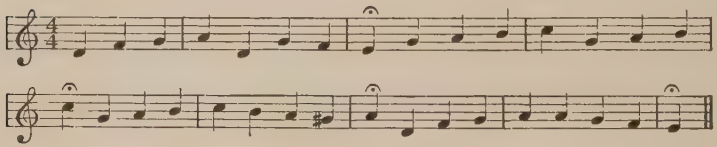
Ex. 591.



of which (*a*) and (*b*) were employed in the authentic mode, while (*c*) was used in the plagal (Hypo-Phrygian,) mode, when the melody ended upon its initial note, instead of on the final.

681. The Phrygian modes could modulate into any of the others, the Dorian, Ionian, and Aeolian being among the most frequently used. It should also be noticed that it is not uncommon for a melody which ends in the Phrygian mode to begin in the Aeolian or Dorian; in this case the real mode is not defined until later. We give as our example of the Phrygian mode an ancient hymn.

Ex. 592. Old Latin: "A solis ortus cardine."



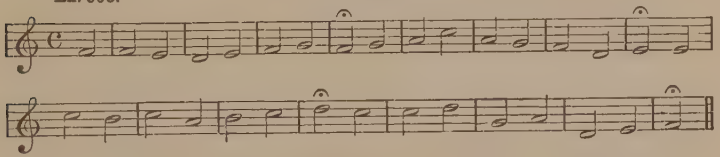
The first line of this hymn is certainly the Dorian, rather than the Phrygian mode, though the first cadence can be harmonized equally well in the Dorian mode, with D, A, as the last two bass notes, or in the Phrygian, with the cadence seen at Ex. 591 (*b*). The second line has clearly a modulation to the Ionian mode; it will be remembered that C, the final of the Ionian, is the dominant of the Phrygian mode. The third line modulates to the Aeolian mode; and the form of the final cadence distinctly proves the mode to be Phrygian.

682. III. The Lydian Mode. This is the first of the three major modes. Like the Phrygian, it has one characteristic note,—the fourth of the scale, B♮, which is an augmented fourth above the final. The chords on the final and the dominant are both major; but just as the Phrygian has no chord on the fifth, the Lydian mode has no chord on the fourth of its

scale. Probably for this reason, it is less frequently met with than any of the other modes, and it has a great tendency to modulate into the Ionian mode by the substitution of B♭ for B♮. This change gives the Ionian mode in what was called by old musicians the "genus molle," that is the "soft kind,"—a name given to the modes when transposed a perfect fifth below their proper pitch. Dr. A. B. Marx points out that as early as 1274 the old theorist Marchettus of Padua gives a rule that in the Lydian mode the B was natural in ascending and flat in descending the scale,—somewhat like our "melodic minor" scale.

683. The final cadence in this mode was our modern authentic cadence, V—I; modulations could be made to any of the other modes except the Phrygian. But, owing to its near relationship to the Ionian mode, it was early supplanted by the latter, and but few old melodies are to be found which are written in the genuine Lydian mode. Beethoven has employed it for a special purpose in his Quartett in A minor, Op. 132, the slow movement of which he entitled "Song of thanks to God by a convalescent, in the Lydian mode." We give the theme of the hymn, (the lines of which are, in the original, divided by interludes,) as a fine example of this mode.

Ex. 593. Beethoven. Quartett in A minor, Op. 132.

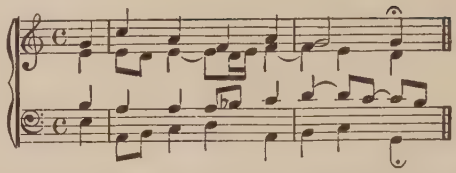


By comparing this melody with the scales of the modes given in Exs. 588, 589, it will be seen that it belongs to the plagal, or Hypo-Lydian mode. If the student will examine the quartett, he will find that in his harmonization Beethoven has most studiously avoided the introduction of the note B♭.

684. IV. The Mixolydian Mode. This mode is much more common than the Lydian mode just spoken of, which it resembles in being one of the major modes. It has two characteristic notes,—the major third, which distinguishes it from the Dorian, and the minor seventh, which distinguishes it from the Ionian. Its three primary chords will be I, IV, and v. We cannot in this mode sharpen the seventh (as in the Dorian,) to make a final cadence; for the seventh is one of the characteristic notes of the scale, and if it be sharpened the mode becomes a transposed Ionian. The usual cadence was therefore the "plagal" cadence IV—I; it is seen in the following example, which is the last line of Bach's harmonization of the old Ambrosian

hymn "Veni, Creator."

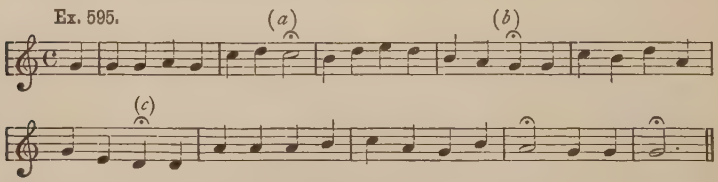
Ex. 594.



It will be seen that this cadence is identical with the modern half-cadence in the key of C major—the Ionian mode. The Mixolydian was so closely connected with the latter mode that, even in the older harmonizations, it is not uncommon to find the final cadence of a Mixolydian melody in our modern key of G (with F♯,)—a transposed Ionian mode. This was probably due to the ever growing feeling of the importance of the leading note in a cadence. The Mixolydian modes could modulate into any of the others except the Phrygian; the most frequently employed modulations being to the Ionian (the fifth below,) and the Dorian (the fifth above). It should be noticed that the latter mode is especially connected with the Mixolydian, inasmuch as the characteristic notes, F and B, are the same in both.

685. As an example of this mode, we select the old choral "Gelobet seist du, Jesu Christ."

Ex. 595.



As the melody lies, not between the final, G, and its octave, but between D and its octave (excepting the E in the third bar), it is in the plagal (the Hypo-Mixolydian) mode. The first line ends at (*a*) on the dominant of that mode (§ 670). In the next line there is a modulation at (*b*) to G, transposed Ionian mode. The earliest version we have met with* harmonizes the second cadence with the dominant and tonic of G major. The third line modulates to the Dorian mode at (*c*), after which the Mixolydian is restored.

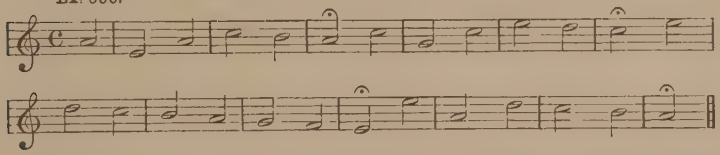
686. V. THE AEOLIAN MODE. This mode and the Ionian are of later origin than those already noticed. Its characteristic notes are the minor third and minor sixth. The only other mode in which both these intervals are found is the Phrygian, from which the Aeolian is readily distinguished by its having a

* By Johann Walter (1551),—given in Winterfeld's *Evangelische Kirchengesänge.*

major, and not a minor second above the final. The Aeolian is the most mournful in its character of all modes, its three primary triads (i, iv, and v,) being all minor. But, the seventh note of the scale not being, as in the Mixolydian, one of the characteristic notes, it was (as in the Dorian mode,) sharpened in the dominant chord of a cadence. The Aeolian could modulate into any other mode, the Ionian and Phrygian being among those most frequently chosen.

687. Owing to the pitch of the authentic Aeolian mode,—from A to A—too low in the lower octave, and too high in the upper, most melodies, unless their compass was very limited, were written in the plagal (Hypo-Aeolian,) mode. As a characteristic specimen, we give the familiar hymn-tune known as "St. Bride's"—

Ex. 596.



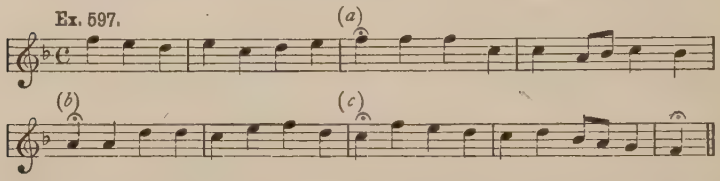
The melody is clearly Hypo-Aeolian. In the second line there is a modulation to C, the dominant of the mode. The third line gives the entire descending scale of the mode.

688. In treating of the minor key in Chapter VII, it was said that the modern minor scale was formed from the Dorian and the Aeolian scales. The Aeolian mode, it will be seen, has many points of resemblance to the modern minor key; yet it is by no means identical with it. It will suffice to point out one important difference. In any modern minor key a common modulation is to the minor key a fifth above; *e.g.* from A minor to E minor. But with the Aeolian mode this would be impossible. In speaking of the Phrygian mode, it was said (§ 680,) that in old music the note D♯ did not exist. Whenever therefore a modulation was made in the Aeolian mode to the mode a fifth higher, this would always be, not to our modern key of E minor, but to E Phrygian, with F and D naturals. Another point of difference is, that in the modern minor key the augmented second between the minor sixth and the major seventh of the scale is often employed with excellent effect; in the Aeolian mode it was absolutely forbidden.

689. VI. The Ionian Mode. This mode, not one of the most frequently used in old music, corresponds exactly to our modern major key. Its characteristic note is the major seventh, which distinguishes it from the Mixolydian mode. The only other scale which has a major seventh (the Lydian,) is known

by its augmented fourth. As in our major key, the primary chords of the Ionian mode are all major (I, IV, V), and the final cadence was also the same as is now employed—V–I. Like the Mixolydian mode, the Ionian could modulate into any other mode except the Phrygian. The modulations most frequently used—at all events in the middle of the eighteenth century, were to the Aeolian, and to the Ionian mode itself transposed into the key of its dominant. This mode, in fact, approaches more nearly than any of the others to our modern ideas of tonality. As an example of an Ionian melody we choose the old choral "Vom Himmel hoch da komm' ich her."

Ex. 697.



This melody is in the "genus molle" (§ 682). The first line of the choral ends with a full cadence at (*a*). At (*b*) there is a close on the dominant of the Aeolian mode; and at (*c*) is a full close on the final of the Ionian mode in its original key, C. It will be seen that these modulations are quite modern in character. We should now describe them by saying that at (*b*) there was a plagal cadence in the relative minor, and at (*c*) a full close in the dominant key.

690. A fruitful source of trouble to the student in investigating these old modes arises from the fact that, from the beginning of the sixteenth century, the plagal modes were generally transposed to the same pitch as their corresponding authentic modes. This was effected very simply by introducing B♭ in the scales instead of B♮. A little thought will show the student that this alteration in the position of the semitones is exactly the same as that produced by transposing the scale a fifth lower. A further difficulty is found in the fact that the modes are frequently mixed in the same piece. By this we are not referring to modulation from one mode to another, but to the introduction, whether in the melody or the harmony, of notes or progressions foreign to the mode itself. Even the old theorists were not always agreed as to the mode in which a particular

piece of music was written.* Of the numerous authorities which the author has consulted, hardly any two are in exact agreement.

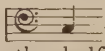
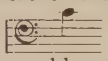
691. We have been unable to do more here than to give a brief outline of the subject, sufficient, it is hoped, to furnish the student with a general idea of the nature of the old modes, and the chief points in which they differed from our modern major and minor keys. Their interest at the present day is chiefly historical, and, excepting when a special archaic effect is desired, they are hardly ever employed in modern compositions. We will conclude by referring those who wish for fuller information on the subject to the articles by the late Mr. W. S. Rockstro in Grove's *Dictionary of Music and Musicians*, to Chapter XIII of the first volume of A. B. Marx's "Composition," and to C. C. Spencer's *Concise Explanation of the Church Modes*.

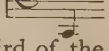
* Some idea of the complexity of the subject may be formed by reading the following quotation from that excellent work *A Concise Explanation of the Church Modes*, by Charles Child Spencer. The author in speaking of the harmony of the old hymn "Lucis Creator optime," which he gives as one of his illustrations, says of a certain passage. "The passage appears to be in the Hypo-Dorian mode on D, but it is really in the Phrygian mode on A, and Hypo-Phrygian on E, and the harmony at the close of this line, which appears to be that of the Lydian mode, is really that of the authentic dominant (*i.e.*, 6th from A)."

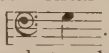
APPENDIX B.

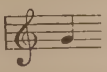
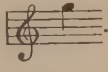
THE HARMONIC SERIES.

692. Though it would be by no means correct to say that modern harmony rests solely on natural laws, it is nevertheless true that a certain amount of knowledge of the phenomena of the production of musical sounds is of great assistance to the student in helping him to understand the relationship of the different notes in a key, and of one key to another. We shall therefore here give an account of these laws, so far as it may be necessary for the student to apply them. What is now to be stated is not in the nature of theory, but of physical fact, and is perfectly familiar to students of natural philosophy.

693. The general law regulating the production of Harmonics may be thus stated:—A sonorous body, such as the string of a piano or violin, vibrates not only throughout its whole length, but in *aliquot parts* of that length, *e.g.*, in halves, thirds, fourths, fifths, etc.; and the musical tones produced by the vibration of the different aliquot parts will always bear the same relation to one another, and to the note produced by the vibration of the whole string. Thus, if the whole string sound the note , each half will sound the octave above, viz.:  . Similarly, if the whole string sounded this last C, the half of this string, (and therefore the quarter of the longer string first taken), will give  ; the eighth will give the C in the third space of the treble staff, and so on. If the whole string sound a G, the half will give G the octave above, the quarter the G two octaves above, etc. The division of any string into halves, quarters, eighths, or sixteenths, gives the various upper octaves of the "generator," or "fundamental tone," that is, the note produced by the vibration of the whole length of the string.

694. But any string will vibrate not only in halves, quarters, etc., but in any other aliquot parts. If a string vibrate in thirds, it produces the twelfth of the fundamental tone, *i.e.*, the perfect fifth in the second octave. Taking, as before, 

for the fundamental tone, it will be found that one-third of the string gives  . Obviously one sixth is half of one third, and, as it has been already seen that the half of a string always

gives the octave above the whole, it is clear that the sixth part of the string will give  and the twelfth  .

695. Here it must be said that the *pitch* of a note depends entirely upon the rapidity of its vibration. What we call low notes are produced by much slower vibrations than high notes. An important law of nature as bearing on this point is that *rapidity of vibration varies inversely as the length of the string;* that is to say, that exactly as the length of the string *de*creases, the rapidity of vibration *in*creases. Vibration is a periodic oscillation, as with a pendulum, the difference between a pendulum and a musical string being that the former is free at one end, while the string is fixed at both, and the middle of the string, where the deviation from a position of rest is greatest, corresponds to the bob of the pendulum. The law of vibration given above can be shown by a very simple experiment. If a ball be fastened to one end of a string, and the string be held by the other end, and the ball allowed to swing like a pendulum, it will move at a rate which will depend on the length of string. Now if the string be held in the middle, everyone knows that the ball will swing much faster—the shorter the string, the more rapid the vibration. And this relation of length to vibration is invariable. Thus in the long string C, that we have spoken of above, for every vibration of the whole string there will be in the same time two vibrations of each half, three of each third, four of each fourth, etc., etc.

696. As the sounds we are explaining are all formed by parts of the whole string, and therefore have more rapid vibrations, and a higher pitch than the generator, they are sometimes called "upper partial tones" or "overtones." A more common name for them, though a less strictly accurate one, is "Harmonics," because those first produced in the series—that is by the vibration of the larger aliquot parts of the string—belong to the harmonies of the generator. Among the higher "upper partials" are many sounds which are unavailable for harmonic purposes; but as the word "harmonics" is convenient, and generally understood, we shall retain it in speaking of these partial tones. When these notes are tabulated in the order in which they are produced, we get what is called the "harmonic series." We shall now give the first part of this series from C. It will be seen that all the even numbers of the series are octaves of some lower number, because (as has been shown above) the half of a string always sounds the octave of a whole string; thus the tenth harmonic will be the octave of the fifth, the fourteenth of the seventh, and so on. (See Diagram on p. 324.)

THE HARMONIC SERIES.

Notes sounded.	Generator (Fundamental tone.)																				etc.
Aliquot part of string.	1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$	$\frac{1}{7}$	$\frac{1}{8}$	$\frac{1}{9}$	$\frac{1}{10}$	$\frac{1}{11}$	$\frac{1}{12}$	$\frac{1}{13}$	$\frac{1}{14}$	$\frac{1}{15}$	$\frac{1}{16}$	$\frac{1}{17}$	$\frac{1}{18}$	$\frac{1}{19}$	$\frac{1}{20}$	etc.
Vibration ratio.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Interval from the generator (or its upper octaves).			– Perfect fifth.		– Major third.		– Minor seventh.										– Minor ninth.		– Minor third.		

697. In this diagram the notes produced by the vibration of the aliquot parts of a string are given. The fractions below the notes show the aliquot part of the whole string which produces any given sound, and the "vibration ratios" underneath give the proportion of vibrations in the same time of the fractional parts of the whole string. It will be seen that the harmonics first produced are all consonant to the fundamental tone; but from the seventh note of the series, inclusive, all the *new* notes produced (*i.e.*, all the uneven numbers) are dissonant. The 7th, 11th, 13th, and 14th notes of the series are enclosed in brackets because these harmonics are not exactly in tune in the key of the generator; the 7th (and of course its octave, the 14th), as well as the 13th, being somewhat too flat, and the 11th decidedly too sharp. The 9th and 15th are not "prime numbers," that is to say, they are obtained by multiplying smaller numbers together, $9 = 3 \times 3$ and $15 = 3 \times 5$. These are therefore called "secondary harmonics."

698. A very important use of this series is that it enables us to calculate the ratios of vibration of different musical intervals with accuracy. Thus between numbers 1 and 2 of the series is an interval of an octave; therefore in every octave there are two vibrations of the upper note to one of the lower in the same time. Similarly we get the interval of a perfect fifth between the second and third notes, of a perfect fourth between the third and fourth, etc. Hence we get the following ratios for the principal musical intervals:—

INTERVAL.	NOTES.	RATIO.
Octave	C — C	1 : 2.
Perfect fifth	C — G	2 : 3.
Perfect fourth	G — C	3 : 4.
Major third	C — E	4 : 5.
Minor third	E — G	5 : 6.
Major sixth	G — E	3 : 5.
Minor sixth	E — C	5 : 8.
Major tone	C — D	8 : 9.
Minor tone	D — E	9 : 10.
Major diatonic semitone	B — C	15 : 16.
Minor diatonic semitone	C — D♭	16 : 17.

The distinction between the major and minor tones and semitones, though it exists, is of no practical importance in connection with harmony; it is given in the above list for the sake of completeness.

699. The student must not suppose that the harmonic series terminates at the 20th note. It might be carried much further;

but no prime numbers above 20 are available for harmonic purposes.

700. It has been shown that upper partial tones can be obtained by causing a string to vibrate in aliquot parts. As a matter of fact many of these tones *are* so produced, together with the fundamental tone when a string is struck. If the student will strike one of the bass notes of a piano, and listen carefully, he will hear first the fundamental tone, then, more faintly, the octave, twelfth, double octave, and, under favourable circumstances, even the major third above this. What takes place is that the string, as soon as it begins to vibrate, divides of itself into its aliquot parts, each giving the note proper to itself, and related, as shown above, to the fundamental tone. But the higher harmonics are either not produced at all, or are so faint that the ear cannot distinguish them without artificial aid. It has been shown by the researches of Helmholtz that a good musical tone is a *compound* tone—that is, one containing some upper partials together with its fundamental tone—and that the different quality of various instruments depends on the presence in varying strength of these upper partials.

701. Of the notes given in the harmonic series shown in our diagram, the first six form the major common chord on C. This chord may therefore be regarded as a product of nature. But the same can hardly be said of the minor common chord; for the first upper partial, which gives a minor third above the generator is No. 19 of the series; and this harmonic is never audible in the "compound tone" spoken of in the last paragraph. The minor common chord therefore is an artificial product; and the same may be said of both major and minor keys taken as a whole. As Helmholtz has well put it,* "the system of Scales, Modes, and Harmonic Tissues does not rest solely upon unalterable natural laws, but is at least partly also the result of æsthetical principles, which have already changed, and will still further change with the progressive development of humanity."

702. Though we are unable to found our whole system of harmony on the harmonic series, it is yet of much service to us in other ways. In the first place, it gives us a good working rule for reckoning the comparative nearness or remoteness of relationship of any two major keys. The rule is this:—*The simpler the harmonic ratios of the tonics of two major keys, the more nearly they are related.*

703. An example will make this clear. We know that the most nearly related major keys to C are F and G. In each of these there is only one note of the diatonic scale differing from

* *Sensations of Tone*, p. 358.

the key of C. It might have been supposed *a priori* that the next nearest related keys would therefore have been those in which only two notes were different, *viz:* D and B flat. But this is not the case; these two keys are not even in the second degree of relationship to C. When treating in Chap. IX of key-relationship, it was said (§ 272,) that two major keys are related when their tonics are consonant, and that if the consonance be perfect the relationship is nearer than if it be imperfect. If the student will refer to the table of ratios given in § 698, he will see that the ratio of a major tone, from C to D is 8 : 9, while that of the perfect fifth is 2 : 3, and of the major and minor thirds 4 : 5 and 5 : 6 respectively. This is the reason why the next most nearly related keys to C, after F and G, are E♮ and A♭, though each contains only three notes common to itself and to C. No two major keys are related in which the ratios of the tonics contain any number higher than 6. It will now be understood why two keys, the tonics of which are only a semitone apart are considered so remote; the ratio of the semitone being 15 : 16 or 16 : 17. The views here given on scientific grounds are borne out by the practice of the great masters.

704. The nature of the difference between consonance and dissonance has been investigated by Helmholtz, who has shown that it is closely connected with the compound nature of musical tones spoken of in § 700. When two musical sounds nearly, but not quite, identical in pitch are heard together, what are known as "beats," or throbbings are produced. This effect is perfectly familiar to anyone who has heard an organ being tuned. These beats produce a certain harshness in the tone, which varies according to the strength and number of the dissonant sounds. In consonances they are so few or so weak as not to disturb to any appreciable extent the purity of the tone; but in dissonances they are much more prominent.

705. It has been impossble here to deal with this subject in detail. The student will find the questions fully discussed in Dr. W. Pole's *Philosophy of Music* and M. Sedley Taylor's *Sound and Music*, both of which can be warmly recommended.

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